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ABSTRACT

A review is made of the literature on continuing education in the health professions. After an overview of the study, six chapters cover continuing education in medicine -- physical composition and distribution, participation in continuing education, organization and administration, instructional processes, evaluation, and summary and conclusions. Then follow four chapters on dentistry -- the profession and continuing education, participation, program administration and organization, and a summary. Four chapters on nursing discuss nurse composition and distribution and concern for continuing education, characteristics of the participants, sponsors and programs, administration of the programs, and some sample programs. Four chapters on continuing education in pharmacy are followed by major conclusions of the study. There are references at the end of each section. (Author)

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CONTINUING EDUCATION IN THE HEALTH PROFESSIONS

A Review of the Literature 1960-1970

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A review is made of the literature on continuing education in the health professions. After an overview of the study, six chapters cover continuing education in medicine -- physician composition and distribution, participation in continuing education, organization and administration, instructional processes, evaluation, and summary and conclusions. Then follow four chapters on dentistry -- the profession and continuing education, participation, program administration and organization, and a summary. Four chapters on nursing discuss nurse composition and distribution and concern for continuing education, characteristics of the participants, sponsors and programs, administration of the programs, and some sample programs. Four chapters on continuing education in pharmancy are followed by major conclusions of the study. There are references at the end of each section.

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March 1, 1973

Stanley M. Grabowski
Director
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PART ONE

PROLOGUE

PROLOGUE

One of the most conspicuous and indeed alarming features of modern life is the rapid growth, proliferation, and diffusion of knowledge in every area of human endeavour. This is having an impact upon individuals and social institutions more profound than one can conceive or readily accept. It is producing changes that erode cherished myths about education which destroys personal and institutional security.

Individuals can no longer enjoy the security that is based on levels of educational attainment for new knowledge quickly makes past learning obsolete. The higher the original level of educational achievement, the more quickly obsolescence occurs; consequently, the several professions are more significantly threatened by change. At the same time, the accepted roles of social institutions are undermined. As new knowledge permeates all segments of society it alters the function and purpose of each institution in its relationship to others and to society in general. The firmly entrenched institutions are most threatened since their security is based on traditional responses to problems which new knowledge has made obsolete.

To survive in a changing world, both individuals and institutions must continue to learn. Such learning does occur but as DeCrow* has noted, much of it

> ...is happening unintentionally, largely unobserved, and without the slightest conscious direction. It is happening of necessity, almost as a reflex motion of a society grappling with social forces which are remoulding a nation to confront the challenges of a rapidly changing world.

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* R. DeCrow, "The Scope of Continuing Education.", Continuing Education (January, 1969) pp. 5 & 9.

But learning cannot be left to chance and without "...the slightest conscious direction." There is too much to be learned, too little time to learn it in, and too many distractions in the work-a-day world to ensure that the learning required will be achieved. In the past, such learning to keep abreast of new knowledge was thought to be an individual responsibility but few individuals accepted that responsibility so that the majority became obsolete and dysfunctional in a changing society. Consequently, it is becoming increasingly obvious that continuous learning is a responsibility that must be shared by both individuals and by society.

Some individuals and institutions have accepted this responsibility for continuing education more readily than have others and over a longer period of time. Adult education has been an integral part of society for centuries but for the most part it has existed outside the institutional structure as an activity of individuals concerned about their own personal need for systematic learning opportunities or with a philanthropic concern for the needs of others. It is only within the past century that educational institutions have begun to accept a responsibility for continuing education but not yet to the extent that it helps shape the self-image of the institutional role and function in society. At the moment, adult education is still largely a marginal activity.

The several health professions are just now becoming aware of their role in and responsibility for the continuing education of their members. For the most part this has been forced on them and accepted with some reluctance through fear of losing control of their own destiny to other forces in society. In implementing this newer responsibility the health professions have not modified their traditional perceptions of learning and education in light of new scientific knowledge about adult education so that their continuing education programs do not usually achieve the learning and changes in behavior necessary for improved patient care.

THE HEALTH PROFESSIONS

The scientific and socio-economic factors accentuating the need for continuing education in the health professions has been well documented in many health manpower reports and by numerous leaders in the health field. Research is producing new knowledge in the health field at an unrelenting pace. Science has made massive strides in the understanding, cure, and prevention of ill health so that life expectancy has been increased two-fold. At the same time, it has become increasingly apparent that new and better means must be found to hasten the application of new knowledge for the improvement of health care.

An increasingly informed public aware of new discoveries and demanding them has accentuated the need to hasten the spread and use of knowledge. Higher education and income levels, as well as expanded coverage by health insurance schemes is shifting the role of the consumer as 'patient' to that of 'buyer' thereby strengthening his position to demand more and better health services. A growing egalitarianism now views health as a basic human right which should be readily available to all with equal quality.

In response to the changing nature of public expectations, universities and professional associations, joined by health service agencies and institutions, are attempting to prevent obsolescence by increasing their involvement in continuing education. Although some interest and activity in continuous learning has long been the concern of some individual members of the health professions, it is only within the past decade that professional groups have concentrated their attention upon the provision of systematic educational opportunities for all in the professions.

In spite of this rapidly growing interest and concern it is everywhere apparent that continuing education is a responsibility not yet discharged satisfactorily or adequately at all levels. Moreover, as noted by Houle*:

> ...even more disconcerting is the expression of a growing public hostility toward the several professions because of the alleged incompetence or self-satisfaction of their individual members, faults which better continuing professional education might have helped to prevent.

Although the case is not clear, the view is expressed widely that continuing education in the health sciences suffers from a lack of clear purpose, an absence of professional interest, and incompetence in the provision and conduct of educational activities. There is also widespread the impression that programs are *ad hoc* or piecemeal instead of continuing, and designed along the traditional lines of youth education rather than taking into account that the potential participants are adults.

Whatever the crux of the problem, the general consensus is that present programs have many shortcomings and that newer and more effective approaches must be found. Recent government reports recommending that

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* C.O. Houle, "To Learn the Future". *Medical Clinics of North America,* 54: 5-17, (January 1970).

"...professional associations explore the means whereby continuing education could be made a condition for practice..." have added a new sense of urgency to the task.

NEW DIRECTIONS

At present, programs for continuing education in the health professions are constructed largely on the model of academic pre-professional education which is controlled exclusively by subject matter and conducted primarily to disseminate information. This approach to learning stems from the prior educational experience of those planning the program as they generally lack sufficient knowledge about adult learning and instruction to do otherwise. Furthermore, as a result of their prior experience in pre-professional education, those for whom programs are planned resist educational activities that violate traditional conceptions regardless of their efficacy for learning. Since the traditional approach to education is not fulfilling the need, continuing education for health professionals must seek new directions.

In order to design new directions, it is necessary to examine existing activities in continuing education. This review, therefore, is a summary and analysis of the literature on continuing education in the health professions from 1960 to 1970 in order to provide a basis to seek new directions. By studying existing patterns of education for the professions it will be possible to avoid earlier mistakes and profit from prior experiences in designing functional educational programs.

CLARIFICATION OF TERMS

The term continuing education has been defined in various ways in the health sciences. Some definitions are broad and encompass all education following the completion of pre-professional programs in undergraduate study. In other cases, the term is defined in a very restrictive sense to apply only to short refresher-type courses. Still others use the term as a synonym of adult education to include all learning activities which contribute to personal growth and development.

As used in this review, continuing education includes any educational activity for health professionals "...through which opportunities for systematic learning are provided". Thus, any planned learning experience is included in this term and these range from formal courses through conferences, conventions, institutes, or workshops, to clinical traineeship so long as they are conducted for practising professionals and are systematic learning activities.

Instructional devices such as recordings, films, television, radio or programmed instruction are also included in this review where appropriate. For the most part such devices are used principally as information sources, to aid in self-instruction, or as ways of extending the range of an instructor to include widely dispersed participants.

The terms course and program are used interchangeably in this review and refer to those learning activities which are designed to achieve specific instructional objectives within a specified period of time.

Thus, a program may consist of a single instructional event such as an evening meeting or a one day institute, or it may be a sequential series of events occurring regularly over a period of time.

The terms method and technique are generally used interchangeably in the literature without specification. A method is a way of organizing the participants for the purpose of conducting a learning activity and may include correspondence study, classes, workshops, ward rounds, or clinical traineeships. A technique, on the other hand, identifies the behaviors that occur in the instructional situation which are intended to help the participant learn and includes such things as the lecture, panel, symposium, discussion, demonstration and similar actions.

Learning is used here to identify the process through which an individual acquires a new capability that is a more or less permanent change in behavior resulting from experience such as acquiring new information, a new skill, or an attitude.

The term instruction is used to identify the action of an agent who designs and manages a learning activity in order to achieve greater success in learning.

LIMITATIONS

This review is primarily concerned with basic program development for continuing education in the health professions. Most of the literature reviewed has been descriptive in nature covering a single program or a survey of program activities. There has been very little done in the way of substantive research and such as is available often fails to satisfy the rigorous canons of social science so that there is little validity or reliability in the data or conclusions presented. Perhaps if it accomplishes no other useful purpose, this review may spur the several professions to engage in research that is functional in answering the many problems identified in the literature.

PART TWO

CONTINUING EDUCATION IN MEDICINE

CHAPTER I

THE PROFESSION AND CONTINUING EDUCATION

In keeping with the rapidly changing nature of science and society, medicine has undergone, and continues to undergo many changes, all of which must be reflected in education at all levels. In both Canada and the United States the number of active physicians has been increased over the past few decades, but this is offset by the fact that the number of patients seeking medical care has increased proportionately (171) (243). Moreover, despite the immigration of foreign doctors to maintain what is considered to be an optimum physician/population ratio, unequal distribution and utilization of physicians has created a disparity between demand and supply (171).

PHYSICIAN COMPOSITION AND DISTRIBUTION

An analysis of medical manpower in the United States reveals that the number of physicians employed in teaching, research, administration, and other activities unrelated to direct patient care, has been increasing in recent decades while the number in private practice is declining (171).

Changes in the pattern of providing medical care have also occurred within private practice. In the United States, the number of general practitioners* declined from roughly 50 percent of the total number of physicians in 1959, to approximately 31 percent in 1967. Current information on physician manpower in Canada reveals a similar trend. Whereas in 1965 the percentage of physicians in general practice was 67 percent, in 1968 the figure had dropped to approximately 54 percent (243).

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* As used in this study, "General Practitioner" refers to those M.D.'s with no specialty training and/or those with some specialty training, but who are not board certified, and who do not limit their practice to a single field.

Since some of the services formerly provided by general practitioners are being redistributed among the specialties, and other health workers (92) (134) (195), the implications of this changing pattern are not clear. Nevertheless, most reports stress the growing concern of both the public and the medical profession over the declining numbers of physicians in general practice, and many authors (96) (195) (257) reiterate the recommendation of the Millis report (163), that a new type of generalist be prepared who has graduate training in family medicine.

Of equal concern are the wide regional differences in the supply of physicians in relation to population. Doctors tend to concentrate in the larger urban areas and it is estimated that over one half of all doctors are presently practising in communities with populations in excess of 100,000 (257). This disproportionate distribution is also found at the state and provincial levels, varying directly with the per capita income and the proportion of the population in urban communities. Thus, while the physician/population ratio in Canada in 1971 was 1:723, British Columbia has the most favourable ratio of 1:638, followed by Ontario with 1:717, and Newfoundland with the least favourable ratio of 1:1,199.

Work Patterns:

A number of recent surveys (127, 232, 242, 257) disclose that physicians average a 56 to 63 hour work week, of which roughly 80 percent is spent in direct patient care. The remaining 20 percent or less of the physician's time is spent in office administration, continuing education, medical society and hospital meetings, research and/or teaching. Contrary to the popular belief that office practice is decreasing, studies reveal that physicians average more than twice as many patient-physician contacts through office visits than they do through hospital visits (16, 127, 242). While generalizations cannot be made from the limited data provided, most authors agree with Somers (232) that "One limit in the doctor's productivity we have almost surely reached...the number of hours that he can be expected to work."

Changing Patterns of Practice:

Group practice, which brings together general practitioners and specialists who can share their expertise, facilities, and the services of supporting personnel, is a logical development to offset the fragmentation of care resulting from increased specialization (163). Such arrangements should also lead to the sharing of on call time, thus lessening the lengthy work week of physicians to some degree. Despite these advantages, the adoption of group practice has been relatively slow in both Canada and the United States (195) (232). Moreover, there is no conclusive evidence that group practice does in fact improve the efficiency or effectiveness of medical care (171).

On the other hand, the major development in the organization of medical practice has been the trend toward hospital based services (232). Without elaborating on the nature of this trend, it is worth noting that there has been an increasing number of articles and reports reflecting the growing internal as well as external contradictions of the medical care system. There are many comments about the inequities in hospital privileges, interprofessional stresses and strains, and the soaring costs of hospital care (183) (196) (232) (243). Furthermore, it has been said that the hospital system is more producer than consumer oriented, and that it has been so busy "keeping in step with medical advances, that it has lost step with the medical needs of the community" (232) (252).

The charge is heard increasingly that while medical science now has the knowledge and technology to promote effective "health medicine", the bulk of medical practice is disease or cure oriented (195) (243). As indicated by the Task Force on Health Costs in Canada (243) "more than 95 percent of health costs are spent on hospital and medical care services, the treatment component, while public health and the preventive aspects constitute less than 5 percent."

The Report of the Committee on the Healing Arts (195) defines the problem in concrete terms:

> This is not the fault of the individual practitioners: most are already overworked in providing curative services. It is the fault rather, of a health system in which medical schools have failed to emphasize preventive health...and in which the rewards in income and professional status are relatively lower in this type of work than for other aspects of medical practice. Furthermore, and more importantly, the system is ill organized for the provision of comprehensive health care...The medical technology is now divided among poorly co-ordinated groupings of practitioners and agencies, specialists, general practitioners, hospitals, community services, and public health agencies.

The issues and problems of the medical care system are enormously complex and will not soon be resolved. At the same time, as noted by Storey (237) "any attempt to improve medical practice through continuing education must take into account the existing system, and relate effective education to that system."

NEED FOR CONTINUING EDUCATION

Three discrete phases of education are distinguishable in the field of medicine: undergraduate education leading to the M.D. degree; graduate education covering the interneship, residency, or other full time study leading to advanced academic degrees or medical specialties; and continuing education, comprising those activities engaged in by practising physicians "both to refresh the individual in various aspects of his basic medical education, and to inform him of new developments in his own and related fields of medical practice, but which do not lead to any formal advanced standing in the profession" (51). This third phase, frequently referred to as the "last undeveloped frontier of medical education," is the concern of this review.

The problem of keeping up with the research revolution is particularly acute in medicine where new developments are occurring, perhaps more rapidly than in any other field. The physician is confronted by ever increasing demands of a busy practice and by the omnipresent threat of obsolescence. Although organized medicine has invested money, manpower, and time, in attempting to help physicians keep current, the returns from this investment are now being questioned. Manning (145) and others (86, 194, 222, 275) estimate that only 10 to 25 percent of the practising physicians engage in continuing education despite the multitude of opportunities available to them. To what extent the quality and techniques of postgraduate medical education are responsible for this seeming disinterest is unclear, nor is it known how many of those physicians who do participate actually benefit from the programs offered.

Although much has been written about the nature of the problem there is insufficient reliable data to understand the problem.

Continuing education in medicine is not without its landmarks. Indeed, most of the problems being debated and the concepts currently considered to be new or revolutionary have been recognized and documented in a number of studies and imaginative reports published in the last half century.

Early Developments:

In his historical chronology, Sheperd (227) reports that prior to 1930, continuing medical education was largely directed toward correcting deficiencies resulting from inadequate basic medical education. It was not until the thirties, when the last of the proprietory schools closed and graduate specialty programs began to develop, that continuing education came to be viewed as the necessary "third stage in the life-long education of the physician." In 1930 and 1931, the University of Michigan, Albany College, and Tufts University, initiated planning for regional continuing medical education programs. Dr. Benjamin Horning's description of the early Michigan program defines precisely the concept of regionalization advocated today (108).

> The University of Michigan medical school has accepted the principles that graduate and continuing medical education should be decentralized and developed about the regional and community hospitals, and that medical education channels should extend from the medical schools out through such hospitals to the rural physicians.

A report by the Commission on Medical Education of the American Medical Association published in 1932 (227) noted:

> 1. That the education sequence from premedical education to retirement from practice be looked upon broadly as a single problem, not a succession of isolated and unrelated experiences.
>
> 2. That the continued education of physicians is synonymous with good medical practice, and provisions should be made ultimately whereby every physician will be able to continue his education. The time may come when every physician may be required in the public interest to take continuation courses to insure that his practice will be kept abreast of current methods of diagnosis, treatment, and prevention.
>
> 3. That the problems of postgraduate medical education are closely interwoven with those of practice and education. The great need at the moment is to secure joint leadership in a program which will embody the educational ideals and methods of the university and the highest type of medical practice.

Others repeating these admonitions and recommendations were J. H. Upham (250) in 1937, and Rappelye (227) in 1940 who also stressed the need for a critical re-examination of existing programs to determine whether they were meeting the needs of practising physicians.

A significant landmark in the historical evolution of continuing medical education was a program evaluation reported by Youmans in 1935 (280). Youmans made unannounced visits to 30 physicians who had attended his course several months earlier and by using a self-devised rating scale for measuring the quality of medical practice, he compared what he believed to be each participant's pre-course performance against his post-course performance. Although the small sample and crude methodology limited his findings, the study is important because it appears to be the first attempt at program evaluation using a research approach. Two observations by Youmans relative to the teaching-learning process were: "...the decided superiority of the practical over didactic teaching...It was very apparent that the work which dealth with patients in the wards and in the out-patient departments or with various technical procedures of diagnosis and treatment, were the most valuable part of the teaching," and "The teacher of the physician student must possess not only knowledge but also a sympathetic appreciation of the problems and limitations imposed on the practitioners by a busy practice."

In 1938, the Council of Medical Education and Hospitals of the American Medical Association conducted the first national survey to determine the nature of existing postgraduate programs. The report of this study revealed that circuit type courses were being used in ten of the states visited (191). It noted that: "Under this arrangement, one physician or a team of physicians would spend from one to two months in a region of the circuit and then move on to a new area" and that "in-residence type programs were evident throughout the country...One, two week or longer periods of bedside instruction of limited groups with provision in medical schools and in hospitals for board and/or lodging, and intimate instructor graduate-student relationships characterize these short term residencies".

The most direct outcome of this report was the decision of the American Medical Association to publish a nation-wide listing of programs of continuing education available, "both as a service to physicians in selecting courses to attend, and as an aid to course sponsors in planning programs." While published first on a quarterly basis, it is now published annually as the "Annual Course Listing". This constitutes one of the major sources of information concerning the field of continuing medical education in the United States. Thus, the decade of the thirties saw the emergence of a number of very modern ideas and several program innovations; nevertheless, according to Sheperd (227), educationally sound programs were the exception rather than the rule in terms of the nation as a whole.

Although a setback in the evolution of continuing medical education occurred with the onset of World War II, this is thought to have had some long range benefits in that it "forced the medical schools and hospitals to re-examine their programs with respect to their quality and quantity, and shifted the major responsibility for continuing medical education from the professional societies where it had traditionally belonged, to the universities and their medical schools" (168).

One major study of the early post-war which reflected a growing concern for the role of the medical school in continuing medical education was the 1949 Deitrick-Berson study (45) which was a national survey of medical school programs including continuing medical education. The recommendations of this report related to continuing medical education were that: 1) courses should be designed so that students can actively participate and their performance be evaluated; 2) courses should be increasingly located in medical schools; 3) medical school faculties should be increased to meet the increasing demands of postgraduate medical education; and 4) that accurate costs should be determined.

Probably the most comprehensive and significant national study on continuing medical education was that undertaken for the American Medical Association between 1952-1955 by Vollan (256). This study included both the producers and consumers with information collected through observation, attendance at courses, interviews with more than 400 persons in programs of continuing medical education sponsored by over 200 institutions and organizations, and through a questionnaire survey of 5,000 responses from practising physicians. The major conclusions and recommendations of this study are summarized as follows:

1. Postgraduate Medical Education Lacks Direction: ...If postgraduate medical education is to develop soundly it is essential to have the major purpose clearly understood the specific objectives delineated, long range plans to obtain the goals, and effective leadership.

2. General Practitioners are Neglected: ...The greatest single need in this field today is for more and better refresher courses for general practitioners. These should be planned specifically for them in co-operation with local general practitioner groups.

3. Quality of Courses is not Consistent: ...This is largely due to undue emphasis on enrollment figures haphazard preparation of courses and the practical limitations that often obstruct educational ideals. This malady can only be corrected by an emphasis on: a) careful selection of faculty and definite responsibility of faculty for postgraduate education; b) systematic evaluation of post-graduate teaching methods; and c) eventually, some form of accreditation procedures may be necessary in this field.

4. Many Physicians Do Not Continue Their Education: ...The best potential cure for this condition is an improvement in the direction and quality of postgraduate courses so as to attract these physicians. The other factors to be considered include: a) arranging patient coverage while the physician is away; b) finding ways to attract the physician; for example, certificate, compulsory attendance; and c) developing the attitude and habit of lifelong learning in the undergraduate.

5. Physician's Time is Limited: ...The practice of medicine generally consumes 60 hours or more a week. Every effort should be made to utilize the time the physician can give to continuing medical education.

> 6. Postgraduate Opportunities are Too Few and Maldistributed: ...90% of the hours are concentrated in six states and most of these are in a few large cities...Postgraduate opportunities should be more equitably distributed.

Emerging from Vollan's study were a number of important items, notably a Guide Regarding Objectives and Basic Principles of Continuing Medical Education Programs. This publication, with minor revisions, now serves as the statement of standards for the field of continuing medical education (65).

Other important reports that followed Vollan's study, were those by Darley (70), Dryer (79), and Storey (237), all of which focussed on a national plan for continuing medical education. Although the recommendations of these reports have not been implemented, they collectively offer a sound framework for the establishment of a "university without walls."

CHAPTER II

PARTICIPATION IN CONTINUING EDUCATION

Organized systematic programs for the continuing education of physicians are not necessarily a new development but the tremendous growth in opportunities and interest has occurred recently. As yet there has been no definitive study of the educational activities of physicians but there have been a number of attempts to assess the amount of participation and the degree of physician interest. Some surveys have attempted to involve physicians in defining their own felt learning needs, and as well, to solicit their opinions with regards to how these needs might best be met. Most studies disclose that postgraduate courses are rated highly as a means of gaining new medical knowledge (117, 200, 256) but, at the same time, the actual extent of physician participation is not known. The oft quoted estimates of ten to twenty-five percent attendance are at variance with recent surveys which suggest a more optimistic thirty to fifty percent attendance rate (37, 117, 263). Recent reports from medical schools indicate a steady increase in enrollment figures over the past several years (54). While this increase may not accurately distinguish the number of individual physicians attending formal courses, it is felt that physician participation is probably somewhat greater than has been generally assumed (6, 37, 50).

Nevertheless, many medical educators express concern that there remains a hard core of physicians who never avail themselves of opportunities for postgraduate work and will not, unless attendance is made mandatory (6, 263). On the other hand, polls reveal that the majority of practitioners are of the opinion that attendance should be a voluntary matter and "they are concerned by the mounting pressure to make continuing education a condition for practice" (254, 260).

Field of Practice:

Most studies indicate that specialists devote more time to continuing medical education than do general practitioners (42, 177, 185, 256). Further, it is reported that specialists spend approximately five percent of their typical work week in some form of teaching and/or research, whereas general practitioners are said to engage in almost no formal teaching activities (42, 258). Vollan (256) attributed these differences, in part, to the longer period of formal education required for specialty practice, however, Peterson et al (185) found no significant relationship between the length or type of interneship and subsequent postgraduate study habits.

A recent California survey (37) found that when a detailed analysis of specialty practice was undertaken, a high percentage of the dissatisfied non-participants were found in select specialties, notably psychiatry, anesthesiology, neurosurgery, and other sub-specialties, while general practitioners expressed greater satisfaction with courses attended, and displayed greater interest in planned programs of continuing education. This study revealed that some specialists, particularly internists and surgeons (other than those in general surgery) attended courses often. The Indiana survey (117) disclosed no significant difference in attendance between generalists and specialists.

Practice Arrangements:

Although it is generally assumed that group practice encourages participation in continuing education, research findings do not support this assumption. At least two studies (37, 185) disclosed that while physicians in group practice were slightly better able to attend programs than were those in individual practice, the difference in participation was not statistically significant. In fact, one study found that while costs deterred relatively more physicians in solo practice from attending as many programs as they would like, more respondents in group arrangements said they limited their attendance because of difficulties in getting away from their practices.

Storey (237) notes that while 37 percent of the physicians mentioned too many patients as an obstacle to course attendance, only 21 percent listed the absence of a substitute physician as an obstacle. He attributes this seeming inconsistency to the traditional North American concept of "medical care as a personalized service provided by the private practitioner himself, and which therefore, cannot be easily delegated to others."

On the other hand, a recent survey by the Canadian Medical Association (196) provides some interesting figures relative to group practice and continuing education. As shown in Table I, these data suggest that group practice promotes not only postgraduate study, but even more important, it provides a great variety of less formal but ongoing opportunities for learning continuously.

TABLE I

QUALITY OF CARE PROCEDURE IN GROUPS
(Canada, 1967)

FEATURES OF GROUPS	NO.	PERCENT
Total number of groups	246	100
Member selection	240	98
Supervision of new members	204	83
Clinical conferences	151	61
Frequent consultations	239	97
Postgraduate study	226	92
Reference library	160	65

SOURCE: Report of the Committee on the Healing Arts; Volume 3, Table 29.5; p. 171. (196)

Menzel, Katz, and Coleman (154) disclosed that the adoption of new drugs occurred on the average of two months sooner where physicians shared offices, than where doctors practised alone. Both Clute (46) and Peterson (185) found that physicians themselves frequently mentioned group practice as a convenient and inexpensive means of consultation. Thus, while group practice arrangements may not necessarily be organized to maximize attendance at formal courses, it appears to provide conditions conducive to continuous learning.

Location of Practice:

Although physicians practising in rural areas no doubt experience more difficulty in arranging to attend programs, an increase in the size of the community does not necessarily correlate with increased participation in continuing education. Conversely, several studies (37, 185, 256) reveal that physicians in smaller cities and outlying districts attend courses more often than do those in larger metropolitan areas, and, when they do attend, they are more satisfied than their metropolitan peers (37). Rising et al (204) attributed the somewhat lower attendance in larger cities to greater dependence on hospital staff meetings as well as to the number of professional consultations available, while those in smaller communities must depend more on course attendance for new information and professional contacts. Both Vollan (256) and Peterson (185) made similar observations; however, they also found that physicians practising in the largest cities averaged the most hours per year in continuing education.

Years of Practice:

Age appears to be an important variable related to participation in continuing medical education. Both Vollan (256) and Peterson (185) disclosed an age related pattern of participation that was characterized by a gradual increase in the percentage of physicians attending postgraduate courses as the number of years in practice increased which reached a peak in the fifth decade and declined thereafter. More recent reports reveal a similar pattern but with younger physicians averaging more regular attendance at formal courses (37, 177). Appel concluded that this trend is related to the realization by younger physicians that they cannot "coast along for the first few years in practice as could their predecessors twenty years ago" (6). Others suggest that this trend may be due more to deficiencies in basic medical education (15, 37).

OPINIONS AND PREFERENCES

Numerous studies have sought some measure of attitudes about continuing education and have attempted to identify factors in the provision of programs which may encourage or inhibit participation. These include such matters as fees, scheduling, instructional processes and content. Most of these factors lie within the domain of those providing programs, consequently the findings from such surveys can provide clues useful in planning.

Deterrents to Attendance:

The major obstacle to attendance is the inability to leave a busy practice rather than gross dissatisfaction with courses attended, or lack of available educational opportunities (34, 37, 39, 117). As might be expected, general practitioners experience the greatest difficulty in getting away for additional study (37, 117, 200). At the same time, they express a greater need for it than do specialists who are more likely to feel that they can get needed information through alternate routes. One study (37) of non-participants revealed that 81 percent of those physicians in surgical specialties and 60 percent in medical specialties indicated "get information from other sources" as their primary reason for not attending, while only 30 percent of the general practitioners listed the same reason. The primary reason for non-participation given by this latter group was "time committed to patients."

Other deterrents to attendance mentioned by physicians included unsatisfactory scheduling of programs; costs; unsuitable subject matter (37) (117) (197) (229); lack of awareness of courses available (39); and, that the physician felt himself to be adequately informed and not in need of further study.

Fees and Stipends:

Most physicians prefer to assumeresponsibility for their own continuing education and are not adverse to tuition fees (37) (169) (204) (260). There is, however, less agreement with respect to receiving financial remuneration for course attendance. In the California survey (37), 39 percent of the respondents were somewhat in favour of stipends, 32 percent disapproved, and the rest were indifferent. Surgeons were least in favour of financial assistance, while general practitioners were most in favour. In New Jersey (99), while 40 percent disapproved of stipends, 11 percent approved, and 49 percent did not respond to the question.

Scheduling of Programs:

Physicians are overwhelmingly in favour of concentrated short courses lasting one week or less (37) (99) (107) (233) (256) (260) (266). Most indicate that either week-end or evening programs would be relatively easy to attend, but express a preference for week-ends (6) (37) (169). In two surveys practitioners gave as their first choice, Wednesday or a Wednesday-Thursday combination (114) (233). With few exceptions, they prefer courses held in their local communities (20) (99) (117) (266) but distance is not as much of a problem as the physicians' feeling of responsibility to his patients (185). Vollan (256) found that two-thirds of the physicians were willing to travel 100 miles or more, as long as the course was a relatively short one.

Opinions differ with regards to the place of meeting. Many doctors prefer to leave the interruptions of practice and hence give first preference to a university medical center (20) (192) (233), a local hotel (6) (192), or resort areas where they can combine education with recreation (37) (192). Others would like programs brought to their local hospital (117) (200).

Long term programs are not endorsed as uniformly as are short courses. There is some indication that physicians are becoming increasingly aware of the potential worth of lengthier in-hospital type training programs (6) (107) (192). In one study (37), three to six month clinical traineeships, and one to three week inservice programs were considered important by those who were familiar with them. Similarly, in a very recent survey of psychiatrists (169), 38 percent of the respondents favoured an extended intermittent course offered over a period of from one to nine months.

Sponsors:

Specialty societies represent an important source of continuing education (42) (99) (117) (197). According to the California survey (37), courses sponsored by specialty societies were rated most highly by physicians, with those by medical schools rated second. Other agencies ranked considerably below these with local medical societies rated last. Approximately 41 percent of the respondents indicated a lack of familiarity with courses co-sponsored by medical schools and hospitals, and 38 percent were not familiar with courses sponsored by hospitals alone.

In contrast, a recent survey (200) co-sponsored by the Western Interstate Commission for Higher Education and the Mountain State Regional Medical Program (hereinafter referred to as the WICHE study) disclosed that in the mountain states, with the exception of Nevada, programs sponsored by local medical societies ranked first; hospital programs second; state medical societies third; and medical schools fourth. Other studies also reveal (42) (263) that programs sponsored by medical societies and national organizations are rated higher than those sponsored by medical schools. While these differences are no doubt due in part to regional variation in the availability of programs, Wenrich (263) suggests that it may also be related to the "town-gown" conflict. In his study, many respondents were of the opinion that the physician teaching in a medical school had "lost touch with clinical reality."

Instructional Processes:

Physicians seem to prefer the more familiar instructional processes. Lectures, panels, seminars, clinic demonstrations, educational films, symposia, and grand rounds, are generally familiar and approved by most (99) (114) (200) (233). Although the traditional lecture has been criticized as a didactic, passive technique in a number of studies, doctors rate it first in their list of preferred techniques (37, 177, 169, 233, 239). Some physicians in Ruhe's survey (220) indicated that this was because "group discussions and question periods were often dominated by more vocal doctors who did not necessarily reflect the interests of the group." On the other hand, many physicians indicate that the exchange of ideas and information in informal conversations with peers can be an important reason for attending courses (212, 263). Two studies suggest that supervised clinical practice, which is rarely used at present, is gaining in popularity (37, 200).

Physicians also express interest in the newer uses of the mass media such as television, radio, and recordings, but they tend to rate them lower than the personal contact methods (37, 117, 263). While this rating may be due in part to the fact that these media are not always available in all regions (39, 99, 200, 212) in California, where all three media are used extensively in continuing medical education, responses indicate that they are perceived by physicians as supplementary when measured against the total spectrum of available methods and techniques (37).

According to a number of surveys, the least popular method of instruction is correspondence study (20, 37, 192). One study found that programmed instruction was well received (263).

In general, specialists indicate a preference for reading, teaching ward rounds, and other more clinically applied techniques (42, 117); however, there are considerable differences in the preferences listed by those in the different specialties. General practitioners prefer methods more compatible with a busy practice. They rate the mass media and bedside clinical courses in medical schools relatively high, as opposed to reading and long term clinical traineeships (37).

Younger physicians favour more participation (37, 117, 200). They are also better acquainted with the different teaching techniques and are more discriminative in evaluating their effectiveness. Thus in the California survey, while younger physicians tended to rate short courses higher than older physicians, they were less likely to consider them applicable to all subject matter than were their elders. With the exception of audio-digest which was ranked fairly high, they considered the mass media less effective than did their older colleagues.

Felt Learning Needs:

Surveys disclose that physicians want subject matter which is immediately practical and applicable to their particular practice situation (37, 84, 212). The most common criticism of non-psychiatrist physicians is that psychiatrist teachers do not understand their practical problems (34, 229, 258). Studies suggest that physicians attending postgraduate courses in psychiatry want to learn concrete ways to diagnose and treat particular patients, and to increase their skills in communication (36, 217, 229, 233, 245). In short, practitioners are more interested in common medical problems rather than esoteric diseases and unusual procedures (37) (190), but this does not mean that they would ignore new developments (126). In one study, 54 percent of the respondents felt that insufficient attention was given to recent innovations in medical techniques. This opinion was more prevalent among generalists and those in medical specialties than amongst surgeons (37).

Physicians also want programs to deal with one or two topics in depth, rather than a broad coverage of several subjects (107, 126, 192). Specialists are of this opinion more often than generalists, but even the latter prefer more intensive coverage of content (37).

There is some evidence that practitioners would like refresher courses in the basic sciences (37, 107), but there is no general agreement on this. In one study some 90 percent of the respondents felt that basic sciences and clinical research programs should continue to be offered, but to a lesser degree (107). In another study approximately 69 percent of the respondents were in favour of more such courses, with specialists in medicine more favourable while general practitioners were least interested (37).

According to the California report (37), the subject matter most frequently requested by physicians relates to the diagnosis and treatment of disease. Moreover, physicians' interest pertaining to medical conditions is to a considerable extent specific to their area of specialization and place of practice (42, 229). Thus, in the Utah study (42) it was found that while endocrinopathies rated highest among all groups, and cardiac arrythmias second, these were ranked very low by surgeons. Similarly, in one area where the socio-economic level of the polulation was higher, all physicians displayed a greater interest in psychiatric subjects than did those from less prosperous areas. When individual practices were examined, great variations occurred in the physicians' perceptions of their learning needs.

At least two studies suggest that physicians would also like more courses dealing with medico-social problems, notably in the areas of "physician-patient relationships," and medico-legal problems (37, 67).

The Utah (42) and WICHE (200) studies indicated there was little correlation between a physician's expressed learning needs and those conditions most frequently encountered in medical practice. Of all groups, generalists were found to be the most realistic in relating educational needs to practice problems. At the same time, it was observed that a great deal of the practitioner's time was spent in treating minor ailments which could have been delegated to medical assistants.

Other Information Sources:

Harris reviewed the published research on the utilization of medical communication sources (111) and concluded that the majority of doctors were acquiring their medical information through visits from the pharmaceutical representative, direct mail, drug sample literature, medical journals, consultation with colleagues, and professional meetings, rather than through formal courses. Subsequent studies suggest that there has been little change. Although the detail man is generally perceived as less valuable (117, 263, 265), medical journals, unsolicited literature, consultation with colleagues, and professional meetings, are utilized extensively by most physicians (117, 200, 263). At the same time, while physicians may use these information sources, they do not necessarily find them too useful (185).

Peterson _et_ _al_ (185) noted that the most common criticism expressed by general practitioners was that medical journals were too theoretical and the content not sufficiently relevant to medical practice. A more recent survey by Hamburg and Dohner (109) suggests that despite the passage of time, the opinions of generalists have not changed, with over 50 percent of the respondents rating current medical literature as of little use as a source of information in the field of urology. Nonetheless, Peterson and his colleagues (185) were able to show a positive correlation between the quality of a physician's practice and his interest in seeking new knowledge through the purchase of medical journals. Similarly, Wenrich (263) in identifying the characteristics of "gatekeepers" or educational influentials in one small community hospital, found that such physicians relied much more on written sources, informal consultations, and discussion with related health professionals in the hospital than did those physicians who sought their advice.

Although research on the use of informal sources of continuing learning is both limited and limiting (150, 275), Peterson _et_ _al_ (185) conclude, as have many others subsequently, "that basic medical education has been only partially successful in inculcating in future practitioners both the ability and the desire to seek out through a variety of informal sources, greater knowledge and understanding of medicine throughout their professional lives."

CHAPTER III

ORGANIZATION AND ADMINISTRATION

The recognition of the necessity for and importance of continuing education has grown steadily in recent years. The growth in interest and participation is reflected in the increased number of courses reported as well as the involvement of more and more institutions and organizations in the sponsorship of educational activities for medical practitioners. Along with the growth in opportunities and participation has come identifiable trends in the organization and administration of continuing education programs.

ORGANIZATION

A variety of patterns of organization are encountered in continuing education for medicine. These patterns are determined to some extent by the sponsorship of the program.

Number of Courses and Sponsors:

The number of courses available to physicians has been increasing over the past decade, with an average increment of approximately five percent per year from 1961 to 1970. In 1970-1971 there was an even greater increment of fifteen percent over the preceding year and this was accompanied by an equally sharp increase in the total number of institutions presenting courses.

TABLE II

CONTINUING MEDICAL EDUCATION COURSES

1961-1962 TO 1970-1971

Year	Total Number of Courses Reported	Number of Primary Sponsors	Courses Sponsored by Medical Schools		Courses Sponsored by Hospitals	
			Number	Percent	Number	Percent
1961-62	1,105	206	---		---	
1962-63	1,146	208	626	55%	104	9%
1963-64	1,264*	267*	760*	60%	163	13%
1964-65	1,569	251	857	55%	265	16%
1965-66	1,641	252	863	53%	351	21%
1966-67	1,608	262	910	57%	338	21%
1967-68	1,830	263	1,000	54%	224	12%
1968-69	1,922	300	1,024	53%	370	19%
1969-70	2,016	323	886	44%	441	22%
1970-71	2,319	303	813	35%	374	16%

*Includes courses offered by five Canadian schools not reported in other years.

SOURCE: J.A.M.A., 214:1526 (November 1970).

In 1968-1969, 372 institutions sponsored or co-sponsored courses and this increased to 611 institutions in 1970-1971 (54). These included 77 medical schools, 291 non-school or community hospitals, 50 city, county, and state medical societies, 66 specialty medical societies, 33 voluntary health agencies, and 94 "others," including schools of public health, postgraduate medical schools, private clinics, foundations, or local and national governmental agencies (61).

The major producers of courses have been the medical schools and community hospitals. As noted in Table II, medical schools alone produced over one half of all courses offered from 1961 to 1969. Although this decreased to 44 percent in 1969-70 and to 35 percent in 1970-71, medical school programs are still the most extensive in that the number of courses offered per school is far greater than the number of courses offered by other sponsoring agencies. Medical schools are reported to average approximately twelve to thirteen courses per school per year, compared with community hospitals which average roughly two courses per hospital per year (61).

Course Content and Eligibility:

For the past seven years the greatest number of courses have emphasized internal medicine, psychiatry, and general medicine, in that order (52) (54) (59) (61). Other major fields with a substantial number include surgery, pathology, opthalmology, pediatrics, obstetrics, and gynaecology (59). Despite this specialty orientation, over one half of the courses listed during the past five years have been open to both generalist and specialist. Because of the varying backgrounds and differing learning needs of the two groups, one might question the wisdom of this, however, Ruhe (220) notes that the experience of medical schools discounts this concern as medical school courses are more often designed for a general audience. An exception to this is psychiatry where there is a tendency to provide different levels of instruction suited to the needs of non-psychiatrists (88) (231). At the University of Southern California, practitioners are offered three course levels: a basic, an intermediate, and an advanced course (88).

While it is impossible to determine the extent to which programs are designed for interprofessional education, the general impression is that the number is small (198). One program which appears suitable to an interdisciplinary approach is the "Care of the Premature Infant" which originated at Cornell Medical Center in 1949 (19). This program was designed for teams of physicians and nurses and the program model has been used in a number of centers in both Canada and the United States (19) (115). More recently, several Regional Medical Programs have reported successful multiprofessional programs on the "Management and Rehabilitation of the Stroke Patient." In most of these, physicians, nurses and physical therapists provide the team nucleus with involvement of occupational therapists, rehabilitation counsellors, and other essential health workers where these are available and required (252). Other fields of study reporting occasional interprofessional efforts are psychiatry (20), and public health (182).

Patterns of Course Organization:

In the annual listing of courses reported in the A.M.A. Journal, there are six major patterns of course organization:

1. Continuous courses are conducted over a consecutive number of hours, days, or weeks, but usually of short duration.
2. Intermittent courses extend over a period of time with a certain number of hours per week or month during that time.
3. Circuit courses are presented in rural areas by travelling faculty.
4. Traineeships are clinically oriented in-hospital residency type programs ranging in length from five days to one year.
5. Home study involves correspondence, programmed instruction, tape recordings and similar devices that enable the physician to study in his own time.
6. TV-Radio courses are similar to continuous courses but offered through the media of radio or television to physicians at home.

Of these six types, continuous courses appear to be the most common pattern as well as the most popular. In the four years reported in Table III these accounted for some 62.14 percent of all courses in 1964-65 with a high of 66.79 percent reached in 1966-67. During 1969-70 the 1261 continuous courses accounted for 65.54 percent of all courses offered with 83.74 percent lasting one week or less.

Intermittent courses were the next more frequent pattern with a high of 31.42 percent of all courses in 1964-65 but showing a decline to 26.86 percent in 1966-67 and a recovery to 30.95 percent in 1969-70. In that year these courses averaged 31 1/2 hours of instruction and appear to have the potential for providing more continuing instruction.

TABLE III

PERCENTAGE DISTRIBUTION OF CONTINUING EDUCATION

COURSES BY TYPE OF COURSE 1964-65 TO 1969-70

Type of course	Year							
	1964-65		1966-67		1968-69		1969-70	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Continuous	975	62.14	1074	66.79	1264	65.76	1261	62.54
Intermittent	493	31.42	432	26.86	555	28.87	624	30.95
Circuit	17	1.08	4	.24	15	.78	14	.69
Traineeships	55	3.50	65	4.04	54	2.80	77	3.81
Home Study	9	.57	16	.99	19	.98	14	.69
TV-Radio	13	.82	14	.87	12	.62	12	.59
Not Stipulated	1	-	3	.18	3	.15	8	.39
	1569	100.00	1608	100.00	1922	100.00	2016	100.00

SOURCE: Journal of the American Medical Association, 190:645, 198:232, 206:2051, 210:1523

Psychiatry makes the greatest use of intermittent scheduling because it is felt that instruction extended over a longer period of time is essential in changing attitudes and teaching psychiatric concepts. Currently, over 70 percent of all psychiatric courses are offered intermittently, and of these, a few extend throughout the whole of an academic year (59). This may account in part for the poor over-all attendance (217) (229) (245) since, as previously noted, busy practitioners find it inconvenient to travel long distances for a few hours of instruction.

Postgraduate Traineeships are offered by many hospitals without publicity, hence the number recorded in the Annual Course Listings may not be an accurate reflection of what is currently being offered. Of the 77 listed for 1969-1970, all were offered on a full time basis ranging in length from five days to one year. While 16 sponsors provided specific course dates, the remaining 61 sponsors left the scheduling to "be arranged" implying that enrollment was negotiable anytime throughout the academic year. In all but three cases, planned instruction was used in addition to clinical experience. Of the 68 sponsors specifying, only 10 limited enrollment to either specialist or generalist and the remainder were open to both groups. Fees varied from no fee, to $2,350 for one eight month experience in pediatrics. Over 80 percent of the sponsors were medical schools, with the Universities of Kansas and Maryland offering the greatest number and variety of programs.

In both Canada and the United States, physician interest in this type of program is said to be increasing, and a number of medical schools report plans to expand their present offerings (8) (10) (35). Major deterrents to date have been the lack of university facilities; the chronic shortage of physicians; and the loss of physician income (189). A program of physician and housestaff exchange fashioned after the successful Tufts regional program has been suggested as one possible solution to these problems (23) (44) (47) (61). Another suggestion is Dimond's highly ambitious proposal calling for the establishment of a National Graduate Medical Center using one or more of the Veteran's Administration Hospitals. In this plan, practising physicians would be offered funded training positions at the Center for periods of one to twelve months. A permanent staff of proven teachers would be assigned to the Center and, in addition, outstanding practitioners would be invited as visiting clinicians (74).

At the operational level, a plan which has been implemented with relative success at Dalhousie University in Halifax (67), Staunton Clinic in Pittsburgh (186), and more recently, by the Washington/Alaska Regional Medical Program (71), is a traineeship offered on a part-time basis but extending over a fairly long period of time. The Washington/Alaska Regional Medical Program has organized a postgraduate preceptorship network involving sixteen university and community hospitals.

During 1970-71, the Faculty of Medicine at the University of British Columbia offered 21 different types of "Clinical Traineeships" in which 56 physicians participated and received 10,475 hours of instruction at an average of 187 hours to each person. The University also has a "Clinical Clerkship Elective Program" for final year students through which they serve for 12 weeks at one of 29 community hospitals in British Columbia. Participating physicians in local community hospitals indicated that the students had an influence on their own continuing education study habits.

Circuit courses have shown a steady decline during the four years reported. Probably the most successful circuit program is that operated by the University of Kansas. For the past seven years, this program has offered six symposia in each of eight circuit centers distributed throughout the state of Kansas bringing continuing education to approximately 500 to 600 rural physicians annually (267). Another successful model is that operated in Michigan. Towsley (6) reports that in the year 1967-1968 programs were offered twice yearly in twenty areas with 1,033 physicians attending at least one of the two programs and 637 attending both. In Canada, the successful pioneer has been Dalhousie University which presently operates regional programs involving 34 centers, each of which received five or six visits per year from the Dalhousie faculty (15).

An extension of this circuit concept to include community hospitals (non-teaching hospitals, both rural and urban) as learning centers with ongoing informal and formal programs of continuing education, is what is receiving the greatest emphasis in the literature of postgraduate medical education today (85) (104) (215) (246). The implementation of Public Law 89-239, authorizing funds for continuing education developed co-operatively by medical schools and health agencies within the framework of Regional Medical Programs (hereinafter referred to as (RMP) on heart, stroke, cancer, and related diseases, is reported to have been a major factor facilitating this trend in the United States (252). Presently, there are 55 RMP distributed throughout the nation, and some of them provide substantial evidence of the wisdom of developing continuing education as an integral part of health services.

Radio, television, and home study programs are few in number and have shown only slight variation over the years.

Another type of extramural program which deserves brief mention is the postgraduate cruise. As noted earlier, physicians indicate a preference for a program which combines a vacation with a limited amount of study. For a number of years Albany College (277), the University of Florida (267), and the Academies of General Practice (125) have sponsored such cruise programs, but the high cost and the time factor are said to limit their use (256).

SPONSORSHIP: ROLES AND RESPONSIBILITIES

While one of the strengths of continuing medical education lies in the diversity of agencies active in the field, at the same time the need for co-ordination and co-operative planning has become accentuated by the great proliferation of programs. In 1955 Vollan (256) concluded:

> There are over 300 different institutions and organizations in the United States known to be engaged in postgraduate medical education in one way or another. This diversity of sponsorship results in duplication of efforts as to the content, faculty, facilities, and scheduling of courses within

> given areas. The net effect is inefficient utilization of teaching resources and frustration on the part of the physician who has to choose from among a large selection of competing offerings. Although competition in itself is not harmful, in this case it results in wasted time, effort, and money.

In the intervening years, the number of sponsors has increased two-fold, and studies both on a national and regional basis merely reiterate the conclusion of the Vollan report (64) (114) (219) (230). In 1952, the Massachusetts Medical Society met this problem of duplication and maldistribution of courses by establishing the Postgraduate Medical Institute, which serves as a central clearinghouse and single source of information pertinent to all continuing medical education in Massachusetts and the other New England states (248). The California Medical Association established a similar statewide information service in 1964 which includes data projected three to five years on all California and Hawaii educational activities and as a further aid to planning courses, the association now publishes in its journal an annual summary of continuing education for the State of California (64).

With the exception of these, and a few successful co-sponsorship plans whereby medical schools, medical societies, and public health departments have joined forces to plan and co-ordinate continuing education for an entire state (207) (252) or region (6) (178) (252), the problem of co-ordination remains unsolved. Related to this problem and contributing to it, is that of defining respective roles and responsibilities. The history of continuing medical education is replete with illustrations of how the major responsibility for continuing education has shifted back and forth between medical societies and medical schools (45) (256) and, more recently, community hospitals and RMP have become involved also (6).

Medical Schools:

As noted earlier, medical schools have been responsible for over one half of the courses offered to practicing physicians over the past decade. While the number of schools involved has varied, the overall trend has been toward increased participation (54) (59) (61). Research data suggest that this involvement through continuing education programs does not necessarily indicate that the medical schools have made a major commitment to continuing medical education. In 1952, Norwood's survey (174) of eighteen medical schools revealed that while most of them regarded state and local medical societies as appropriately cast in the supporting role for educational activities administered by the medical schools, their own interest in continuing medical education was only casual. The majority of educators and administrators interviewed tended to favour the undergraduate and graduate programs, and to regard continuing education as an "extra chore." In 1963, Ruhe's study (220) of eighty-six American and twelve Canadian medical schools, disclosed that only twenty-five schools had programs rated "good" by the criteria outlined by the Council on Medical Education. The majority of program offerings consisted of isolated courses unrelated to one another and frequently lacking in specific objectives. Of the American schools, thirty-seven (43%) rated continuing medical education as a major responsibility, while four (33%) of the Canadian schools did so.

Krystal's more recent survey (135) of institutions providing continuing education for psychiatrists found that while forty-two responding medical schools felt that continuing education was the responsibility of universities, only nineteen departments of psychiatry were actually offering courses. Five departments were emphatic in stating that this was the responsibility of the professional societies.

Many writers suggest that medical schools continue to fall short in fulfilling their leadership role in continuing education. Each admonishes the university medical schools for not recognizing their responsibilities in the field (6) (137) (208) (230) (240) (246). From such writing one gets the impression that the medical schools have exerted very little effort indeed; but this is misleading as many medical schools have been steadily improving their programs and establishing more effective administrative arrangements for continuing education. In the United States this trend has been fostered by Public Law 89-239, but even without Federal aid this increasing involvement of medical schools would continue. In Canada, a number of universities report an increasing trend toward co-operatively sponsored programs, more often involving medical schools and hospitals or medical societies (8) (14). Also reported are plans to implement programs sponsored jointly by medical schools (10, 11).

Still to be resolved, however, is the question of national co-ordination, and perhaps even more important, the question of how much responsibility medical schools should and/or can assume in the continuing education of practising physicians. Probably Hudson (120) best summarized the present position and future role of the medical schools:

> Many faculties have a sense of obligation to contribute to continuing education...But in the face of shortage of funds and personnel and overwhelming teaching and research commitments, there is an equally strong feeling of frustration that to take on more would be impossible. The fault is not that a great deal can't be done...it is being done. The models exist but an example here and there is not adequate to demonstrate the fact that physicians must have easy access to current information that can be used for the benefit of their patients. In future, I believe it is inevitable that universities and their medical schools will assume a major share of responsibility in the field of continuing medical education. A major share is not the whole of responsibility. I hope that the periphery may co-operate with the center by trading ideas and personnel in such a way that the teacher learns and the students teaches, and that there will be an exchange of fact and knowledge for wisdom and experience.

Community Hospitals and RMP:

Since community hospitals are widespread and utilized by most physicians as part of daily practice, considerable attention is now being directed toward their development as the major foci of continuing medical education (216) (269). It has been emphasized that if the regular hospital staff conferences, committee reviews, consultations, and other routine day to day activities were effectively organized, these could serve as the means through which continuing education could become a built-in component of medical practice (188). Even more importantly, there is a growing consensus that the hospital setting is the one place where the quality of medical care could be assessed if an ongoing program of current case medical audit were enforced (85) (139) (225).

On the other hand, physicians in practice may not share these views. Werch's study (264) of five community hospitals revealed that while all five utilized regular chart reviews, the prime objective was only to meet the minimum standards of hospital accreditation. In many instances, there was a general "hands off" policy, and even gross errors were overlooked and not criticized constructively. This study also disclosed that consultations were more often used simply as a way to transfer patients to another physician or service, and rarely was there an exchange of medical viewpoints. Similarly, Fox and Robertson's review (103) of eighty-six Consultant's Letters found that only 30 percent of the reports included relevant new information or reinforced existing information which might have been of educational value to the referring physicians. Moreover, in not one case was a reference cited.

Wenrich's study (263) in one community hospital disclosed that since hospital by-laws required active physicians to participate on review committees, and made attendance at hospital staff conferences compulsory, "whatever their educational value, they were viewed by physicians as administrative obstructions, designed to police the practice of medicine." Wenrich quotes Dr. N. Stearn as saying, "educational activities at the local level can be successful only if individual physicians see themselves not only as physicians but also as teachers, and are willing to assume some responsibility for preparation, participation, and presentation."

The phenomenal growth of separate hospital departments of medical education in recent years is viewed by many authors as a significant development which will facilitate this trend (104). As a relatively new educational activity, the role and function of these administrative units is not clearly defined and in many instances, medical education directors devote only a few hours a week to continuing medical education (25) (188). Moreover, the response of individual hospitals to this new and more demanding role is variable with some even resisting attempts by medical schools to assist the hospitals in developing their own ongoing programs of continuing medical education (14) (188).

The 1967 Planning and Goals Conference sponsored by the California Medical Association (188) recommended:

1. That community hospital medical staffs be encouraged to organize a committee to study the problems of continuing education. This should not be confused with the regular program committee.
2. That the CMA should communicate with hospitals to inform them of educational assistance that is available. For example, some hospital staff do not know that some medical schools will help them with planning hospital staff meetings.
3. That the CMA encourage community hospital medical staffs and medical schools to enter into experimental projects designed to discover feasible relationships that might be developed.

Recent reports by the Council on Education of the American Medical Association (59) (61) suggest that some progress has been made in these directions. As previously mentioned, RMP have in many instances served as a stimulus in encouraging community hospitals to assume a more significant role, and in turn to seek assistance from the medical schools, Some RMP are themselves now being charged with developing "parallel offerings not necessarily complementary to those of universities and component societies" (6).

Medical and Specialty Societies:

Historically, local and state medical societies were the pioneers of postgraduate courses for physicians (191). Although still active in the field, their programs have been declining steadily. According to the Council's Annual Reports (54) (59) (61) general medical societies are presently averaging one percent or less of the total postgraduate hours of instruction reported. At the same time, national, state, and local meetings with an educational component are reported on the increase, but the general consensus is that most medical society programs lack co-ordination and continuity, and that the business and social functions frequently take precedence over educational activities (256) (263).

Although many medical societies are presently re-assessing and attempting to improve their current programs, others are questioning their role as producers of continuing education (6). At a recent discussion this view was advanced (268):

> Leadership as a learned society is passing from medical society to hospital staff...I do not hold that this is good or bad, simply that it is happening. Local groups that are highly organized are perhaps better able to carry out programs of continuing education than medical societies which may have many component bodies concerning themselves with education, thus having confusing re-duplications. The role of the medical society is really the co-ordination of this kind of activity, the development of a multi-phasic approach, including medical colleges.

An application of this is illustrated by the activities of the California Medical Association. In addition to co-ordinating course offerings and accrediting programs for the State of California (187), the Association is conducting Regional Medical Institutes in cooperation with several of the state's medical schools. To further assist the medical staffs of community hospitals in developing effective continuing education programs, the Association recently published a supplement to the American Medical Association's Guide (38), and is operating a pilot project to examine the potential role of the community hospital.

In contrast to general medical societies, specialty societies are well established as purveyors of continuing education. For the past several years they have averaged from eleven to twenty percent of the total hours of instruction reported (52) (61). While their offerings are few in number in comparison with medical schools, the number of physicians attending specialty courses almost equals the attendance reported at medical school programs. Thus for the year 1968-1969 (54), specialty medical societies and Academies of General Practice offered collectively 467 courses which were attended by 29,590 physicians at an average of 63.36 per course. In contrast, medical schools offered 1,128 courses with an attendance of 34,106, at an average of 30.24 per course.

Despite this seemingly successful performance, specialty medical societies are presently receiving the same criticism that is directed at medical school and general medical society programs. In short, it is said that their programs are episodic, and that the relevance of "one set of presentations to others, either within the meetings themselves or relative to other meetings, often is strikingly lacking" (230). Miller (159) adds still another dimension to the problem:

> The incredible success of modern preventive and therapeutic measures in medicine is changing the basic nature of medical practice. The growing host of aging patients, of those with chronic debility or disease, calls for a kind of care that is less readily measured by precise instruments or in precise units. The "Recent Advances..." in dealing with these problems are as often provided by behavioral scientists are by those from the purely biologic disciplines; the subtleties and complexities of patient care in this context are only beginning to be elaborated by serious students and have yet had little impact upon

> practitioners or the educational programs offered to them. It will require the most skillful leadership to introduce such important components of the contemporary social fabric into the instruction of physicians whose focus has for so long been the disposition of acute problems...

PROGRAM PLANNING AND ADMINISTRATION

The literature pertaining to program planning and administration is limited to medical schools, consequently, this section is confined to arrangements within schools of medicine.

Administrative Arrangements:

In all articles on the organization of continuing education in schools of medicine it is recommended that there should be a clearly defined department or division with a full time director responsible for the overall program (38) (207). This ideal has been achieved in but a few medical schools.

In 1963, Ruhe (220) found that while 54 American (62.8%) and 6 Canadian schools (50%) reported having a department. section, division, or standing committee for the planning and implementation of continuing education, only 5 American (5.8%) and 1 Canadian school (8.3%) had a formally recognized department identified in the Directory of the Association of American Medical Colleges. Moreover, while 57 American (66.3%) and 7 Canadian (58.3%) schools reported a part-time person responsible for continuing education, in only 3 American (3.4%) and in no Canadian schools was there a full-time director or head. As late as 1967, Sullivan (240) noted that of the 65 medical schools offering courses in the Annual Listing, 20 percent had a listed department or division of continuing medical education.

Reporting on the current accreditation program in the United States, Ruhe (218) identified the lack of central authority as one of the major problems facing the accreditation committee. It has been found that in many institutions programs are developing within schools or hospitals with little co-operation among departments. Even where there is central authority, in some institutions the responsibility for the development of educational programs is left to individuals or groups rather than planned on a departmental basis. As a result, educational offerings are said to range from excellent to poor.

In Canada, a 1968 survey (241) of medical schools disclosed that twelve of the fourteen responding schools had an established department, division, section, or standing committee on continuing education. The remaining schools reported persons assuming this responsibility on a part-time basis, ranging from one quarter to three quarter time. On the other hand, all fourteen responding universities indicated that the postgraduate division or section assumed major responsibility for the selection and arranging of course content under the direction of an appointed chairman.

Instructors:

Courses sponsored by medical schools are taught largely by members of the regular faculty or by guest lecturers from other medical centers. Non-academic physicians or non-medical personnel are utilized far less frequently (45) (220) (241). A view gaining strength is that practising physicians should be encouraged to participate in teaching, thereby involving them in their own continuing education and at the same time alleviating some of the excessive demands made on the medical school faculty. The evolving role of the teacher as consultant in regional programs (208) probably illustrates best the successful implementation of this approach. The pilot project reported by the Tufts New England Medical Center (210) utilizes residents as teaching consultants in several of the small community hospitals in Maine which is another innovative and promising program model.

Despite the trend toward greater utilization of clinicians as teachers, with the exception of psychiatry teacher training programs are still sparse. In psychiatry, short training courses for program directors and teachers have been undertaken by a variety of groups including: WICHE; the American Psychiatric Association; The National Institute of Mental Health's Continuing Education Branch; The American Academy of General Practice; and others. In a recent editorial, Stratos (238) reports that the Psychiatry and Medical Practice Committee and the Physician Education Project of the American Psychiatric Association plan to expand consultation services and intensive teacher training sessions for those involved in teaching psychiatry to non-psychiatrists. From the general field, a recent proposal by McMaster University plans to provide a visiting teacher program in which both practitioners and consultant from the region will work in the McMaster clininal teaching units to update their clinical skills (11).

Although there is a growing interest in the need to improve the quality of instruction in the undergraduate medical training program, this has not extended generally into continuing education. The feeling that proficiency in medicine is the principal prerequisite still persists without regard to teaching ability or to the amount of learning achieved by participants. Some moves are underway to improve the quality of instruction by providing clinicians with training for the instructional role.

Finances:

Financial support for continuing education varies widely from school to school (220). In general, the major sources of revenue are tuition fees, some government health grants, and donations (8) (14) (135) (274). The percentage of the medical school budget devoted to continuing education is almost negligible. Nevertheless, since most schools do provide facilities as well as faculty time, their contribution is not insignificant (45).

Some medical schools attached to state universities receive additional funds from the legislature and state health departments. Others support their programs through contracts with community hospitals, some are financed by fees charged for individual programs, or consultation services to other institutions (9); still other programs are managing to break even or to operate at a modest profit almost solely on tuition and the contributed services of the regular faculty (9) (45) (55). Professional associations, voluntary health agencies, federal training grants, pharmaceutical firms, and philanthropic societies all contribute significantly to continuing education in medicine (8) (12) (45) (55) (207).

More recently, particularly in the United States, the federal government has provided greater financial assistance to continuing medical education. Childs (44) noted that projects supported by government have proven effective in accelerating the development of more innovative programs of continuing medical education.

Publicity and Promotion:

In the United States, sponsoring institutions may publicize their course offerings through the "Annual Course Listing" published each year in the early August issue of the *Journal of the American Medical Association*. In addition, medical journals in both Canada and the United States publicize selected course offerings. Other traditional methods of advertising programs include posters, direct mail and personal announcements (241).

A number of state medical societies (6) (64) report the use of a special continuing medical education bulletin. One such, which is mailed to physicians and hospitals in the New England States, announces all formal programs offered in New England including essential information as to their time, place, and tuition (248).

In Canada, the University of British Columbia (8) publishes an annual listing of courses offered by the Division of Continuing Education in the Health Sciences. This is mailed to all physicians in the province to assist practitioners in planning their personal programs of continuing education well in advance.

Because these publications are often overlooked by physicians, some course sponsors are using reinforcement through personal visits to physicians (222) (269) and newspaper, television, or radio announcements (11) (269).

Programming

In spite of all these efforts to promote continuing medical education, the problem of relevance is thought to limit the effectiveness of most programs offered (84) (173). Those expressing this view suggest that programs ignore the interests and expressed needs of practising physicians. Reports from medical schools suggest that many use questionnaires extensively to test the market for continuing education (220) (241). Indeed, as early as 1952, Norwood (174) found that it was a common practice for medical schools to send out request forms on which physicians could note their suggestions for courses.

Many programs are not designed with clearly defined objectives and, as Miller (159) indicates, in the process of implementation physicians' "wants" may become confused with or subordinate to what the programmers "want or think the practitioners need." Moreover, "unless the teacher is careful to determine where his students are in their learning... and requires them to exhibit some understanding of each step before proceeding on to the next, a program of greatest relevance may end as a collection of nonsense syllables with carefully concealed irritation and disappointment on both sides."

Sodeman (230) has stressed that the ideal program is "an individual one built to suit the specific requirements of each physician, and perhaps a few more like him." The obvious implication of this principle is that the programs most likely to succeed are those which involve the learner in the planning process. That present organizational structures and administrative patterns are unable to meet this required is implied in the many critiques on continuing medical education (104) (219) (225) (246).

Several recent experimental programs have attempted to involve the consumer in planning programs. MacLeod (144) reports a successful self-sponsored and self-administered course on internal medicine at the Yale-New Haven Medical Center. Although initiated as an annual review for internists preparing for board examinations, this program has evolved over the years into an ongoing comprehensive review of the whole field. While the main criterion of "success" has been measured largely in terms of increased enrollment (from 26 to 60 physicians over four years), in the words of MacLeod:

> The growth of this highly structured yet informal review course appears to have been a function of the relevancy of the course material and a sensitivity to the changing needs of the group. The principles of student participation in planning and administration, and continuous feedback through questionnaires, served as the basic framework for the organization of the course. These principles are important considerations for others desiring to set up such a course and merit emphasis by the American Medical Association's Council on Medical Education in setting standards for accreditation of institutions providing postgraduate courses.

Another experimental project which points out the need to consider alternative administrative arrangements for programming, is that reported by Torrens (246) of St. Luke's Hospital in New York City. In this project, a specially created hospital department called The Community

Physician Relations Office was established in order to assist non-affiliated general practitioners with patient referral problems and concurrently to offer continuing education programs specifically designed to meet the day to day problems encountered by physicians in their local practice. Initiated to offset the increasing isolation of general practitioners from the specialist oriented teaching and research hospitals, this program has resulted in increased utilization of the hospital's referral services as well as the teaching conferences and grand rounds which previously the general practitioners had ignored as "of little use to them in their practices." Torrens recommends that "other teaching hospitals establish a similar office or department to serve as a single place to which the community physician knows he can turn for assistance with problems of patients in his practice, and from which he can obtain information about patients he has referred to the teaching hospital for care."

Webster and Ozarin (262) describe a program in North Carolina in which a circuit riding psychiatrist made regular visits to all physicians in five counties and was available at any time physicians wished to consult him about cases. During the first two years in which this project was in operation, the number of admissions to the state mental hospital from this five county area decreased whereas admissions from other counties increased. The program is being expanded throughout the state as an adjunct to community mental health services.

The preceptorship project sponsored by the Washington/Alaska RMP is another example of a program specifically designed to meet the learning needs of individual physicians. The physician requesting a preceptorship is asked to outline what he wishes to learn and to indicate whether he wishes a structured program or one with free study and conferences. The planner uses this information to design an individualized program of studies for the physician. The evaluation of the program is based on the objectives stated originally by the physician. To date, 92 percent of the physicians who have participated in the program are reported to have satisfied at least three-fourths of their educational objectives. Although no statistical evidence was offered to show improved patient care as a result of the program, Davidson _et al_ (71) noted that "In this type of program, the physician is able to satisfy his own educational needs which makes his experience relevant to his practice."

Under the auspices of the Oregon RMP, Meighan and Burg (152) are investigating the effectiveness of an experimental project in which health professionals in two Oregon communities are given an opportunity to develop their own educational programs on the care of the stroke patient. This is based on Miller's "process" model which assumes that before adults learn they must recognize their need to know, and that this is best accomplished by involving them in identifying problems and seeking solutions. To implement this, "stroke study groups" were formed, membership of which was interdisciplinary representing all health care professionals available in the communities. The study group task was to "identify existing barriers to the delivery of optimal stroke care and then to design educational programs to surmount them...

The project staff participated as facilitators enabling the groups to work together in identifying local educational needs or in planning programs..." To date, two groups have planned community programs which differ widely in objectives and approaches. One of these groups has submitted a proposal for a grant to continue the program independently when the experimental project ends. Meighan and Burg question "whether such a group can function without administrative assistance from outside the community..."

CURRENT AND RECURRING ISSUES AND TRENDS

Despite the many unresolved issues and operational problems, continuing medical education is thriving. Concurrently, a number of developments are occurring which can be expected to influence future trends but there is still many issues that require the attention of the profession.

Accreditation:

Since the publication of the original "Guide" in 1957, the American Medical Association has been working on a voluntary system to accredit institutions sponsoring programs of continuing education. In 1961, its Council on Medical Education appointed an advisory committee, and under its direction a number of site surveys were conducted to determine the feasibility of such a plan (219). As a result of the study, an acceptable program of accreditation was proposed and approved by the Association's House of Delegates. In 1967, formal accreditation was initiated (81). By September 1970, 86 institutions and/or organizations had been accredited and listed as such in the Annual Course Listing. Ultimately, only accredited courses will be included in this Annual List. In this way it is hoped that programs of inferior quality will either be improved to meet accreditation standards or discontinued because physicians do not attend them (61).

The "Guide" provides the criteria used by the survey teams responsible for accrediting programs (65). The California Medical Association has adopted this "Guide" as the statement of basic principles for its proposed accreditation of programs (187). Briefly stated, these criteria are:

1. There should be ADMINISTRATION of the continuing education program by a responsible person having the respect and support of the professional staff of the organization or institution.

2. The BUDGET should be adequate to the educational program undertaken to its continuing improvement. Sole dependence on tuition fees tends to restrict unduly the quality of continuing education programs.

3. The TEACHING STAFF should consist of physicians and their associates of proven ability, training, and experience.

4. The CURRICULUM of any continuing medical education program should be designed to explore with considerable depth one subject or a closely related group of subjects. The educational merit of devoting sufficient consecutive sessions to explore more than superficially the background and advances in one subject is emphasized.

5. There should be available FACILITIES that encourage participative methods of education.

6. The EDUCATIONAL METHODS should include more than a series of lectures or panel discussions in which the physicians are primarily passive recipients. Emphasis on problem-solving is likely to increase student involvement.

7. METHODS OF EVALUATION of the effectiveness of continuing medical education programs should be developed and used as part of each program.
8. Each PHYSICIAN'S REWARD for participation in continuing medical education always should be his improved ability to care for his patients and the stimulation of his own spirit of intellectual adventure.

While it is too early to predict the long term effects on this accreditation program, it is generally viewed as a non-restrictive regulatory mechanism which will ultimately provide some direction for the development of the field (61).

National Plans:

Darley and Cain (70) proposed in 1961 the establishment of a National Academy which would centralize the nation's education resources for continuing medical education thereby helping to co-ordinate and further its development. Subsequent to this, the major national medical associations formed a Joint Study Committee to consider the development of such an Academy. The Committee's report, written by Dryer (79) proposed the creation of an Academy which would be a "university without walls." Under this plan, a national agency would develop a core curriculum "responsive to the needs of the nation's physicians." Using mass communication media, these ongoing comprehensive programs would be focused nationally, regionally, and locally, and physicians would be able to choose those programs which would best meet their individual needs. Among its many far sighted recommendations, the report emphasized that..."a partnership of our major medical resources will give strength to all which none possess separately, and that such an efficient balance can be organized to articulate and reinforce national, regional, state, and local plans."

Following the publication of this report, the American Medical Association undertook to pursue such a plan and under the leadership of Storey (237), an intensive study of physician's needs was begun in a pilot project in Utah. In 1966, this project was discontinued because it was felt that local and regional conditions were not ready for such a large scale undertaking.

The many highly imaginative and creative ideas inherent in these reports are germane. The Interuniversity Communications Council founded in 1965 by Darley and a small interdisciplinary group of university people was a product of the original plan for the establishment of a National Academy. Similarly, Dimond's proposal for the creation of a National Graduate Medical Center would have this Center serve as the base for Dryer's "university without walls" (73). The most recent proposal was that outlined by Bloom (6) and called the AMA Plan. In summary it notes:

1. Among all forces involved, the American Medical Association would be the appropriate leader in continuing education, implementing an intimate partnership with universities or medical schools and Regional Medical Programs.

2. In this way, the AMA would expand its present programs to approve existing offerings and stimulate new efforts in its constituent state societies.

3. What is needed is clear statement of the AMA role as a natural partner with RMP in assessing needs and evaluating performance, and as a natural partner with universities or medical schools in continuing education.

4. Further, the AMA should formally invite others to help design and join a new sector for genuine collaboration in all aspects of continuing education.

   This could be called the "health professions education council"; with regional, state and national components; each composed of AMA, university and RMP elements (plus any other pertinent representation).

   This sector would guide operations of a total system from identification of needs to curriculum to programs, to evaluation and feedback.

   The existence of this device would interrupt current separation where AMA, RMP, universities, various professional societies and multiple other forces proceed unilaterally in continuing medical education.

Incentive for Learning:

Under increasing public pressure, many leaders in medicine forecast that the problem of maintaining professional competence in physicians will result ultimately in periodic mandatory relicensure. In the absence of valid criteria for measuring "professional competence", the medical profession remains divided on this issue. An ad hoc committee of the AMA's Committee on Education proposed recently that regular participation in continuing medical education should be the condition for relicensure, but the only concrete action the AMA has taken in this respect is to offer a 'Recognition Award' to physicians participating in continuing medical education. For those physicians wishing to qualify, "the requirements are 150 credit hours of continuing education in a period of three years, 60 hours or more made up of required educational activities and the remaining 90 hours, in electives" (184). According to most accounts, physicians have responded well to this voluntary accrediting scheme and at the completion of its first year, more than 14,000 physicians are reported to have qualified for the award (61).

The California Medical Association is issuing a similar award of a "Certificate in Continuing Medical Education" but has extended the scheme to cover a wider range of informal educational activities. Upon receiving this Certificate, physicians automatically qualify for the AMA Physician's Recognition Award (128). Since its inception, the Academy of General Practice has required participation in continuing education as a condition for membership, and recently the Oregon State Medical Society followed this lead by making regular participation in continuing medical education a condition for membership (182). There is some concern being expressed as to how much effect this loss of state medical society membership would have on the chronically nonparticipating physician. Many feel that such physicians are better "under the umbrella of organized medicine than outside it" (6).

Stein (236) reports that "while the general subject of re-examinations and re-certification of licensed physicians has been repeatedly discussed by the Federation of State Medical Boards and by the National Board of Medical Examiners, no definite decision has been reached." The newly established American Board of Family Practice has stipulated recertification every six years (55), and recently, the American Board of Internal Medicine announced its intention to implement a recertification procedure (118).

The American College of Physicians has devised a voluntary examination for internists which serves as a self-assessment test. It is hoped that this will help an individual internist become more aware of his deficiencies in medical knowledge so that he will seek ways to correct them. Initially, 5,000 of the 150,000 ACP members took the test, and since that time, an additional 5,600 members and non-members have participated. According to Rosen (213), the reactions to the examination have been enthusiastic. More recently, the American Psychiatric Association (40), the American College of Pediatrics (69), and other national specialty associations (142) are reported developing similar programs.

Commenting on the varied approaches currently being tried in an effort to ensure professional competence, Miller (159) writes:

> The purpose of licensing is to certify that competence has been achieved, not to spell out the method of achieving it, or equating participation in a specified number of wholesome activities with achievement of the goal. The American Academy of General Practice has already done so and is often commended for the courageous decision that made participation in accredited programs of postgraduate education a requirement for continued membership. One can only applaud the motives that led to this decision, but the thoughtful may question the philosophy underlying it and the practices accompanying it. For the spirit of this resolution seems to say, that having led a horse to water, you can make him drink.

In the same vein, a recent statement issued by the Committee on Medical Education of the New York Academy of Medicine (55) concludes:

> ...that certificate concept, if judged only on the basis of total number of hours in some kind of postgraduate course is fallacious is that it implies unwarranted merit to course work. The committee also strongly opposes any mandatory examinations for maintenance of the currency of one's medical license. The available information does not support a positive relation between the results of most such tests and the quality of care provided by practising physicians for their patients...

Accordingly, this committee recommends: "the establishment of programs based on management type or audit type procedures whereby both hospital and community physicians may participate in mass audit exercises, reviewing each other's charts or record room charts generally, to indicate features of particular diseases which must be considered and appropriate approaches in their management."

Whatever the merits and/or limitations of these varied approaches, clearly the trend is "to give recognition for participation in continuing medical education" (61).

CHAPTER IV

INSTRUCTIONAL PROCESSES

In the literature describing programs of continuing education in medicine, the terms applied to instructional processes are used indiscriminately and without either precision or consistency. Since the descriptions of the processes are inadequate to allow translation into the standard terminology of adult education it will be necessary to summarize the literature as presented rather than attempting to synthesize it.

Among other things, the reports of programs do not clearly differentiate between the methods and techniques employed (255). Nevertheless it is possible to identify the major methods. The most used method is that of the course or class with three major variants or patterns of this method being the continuous, intermittent, and circuit courses described earlier. Other methods encountered include ward rounds, case seminars, clinical conferences, clinical practice, and the discussion group. The literature in which these methods are discussed is primarily descriptive and there is scant evidence of attempts to assess the effectiveness of the methods nor to compare one with another.

The techniques of instruction reported are equally poorly defined and described so that terms describing methods are used interchangeably with those identifying techniques. Furthermore, instructional aids or devices are often treated as instructional techniques. The resultant confusion in language makes it virtually impossible to assess the comparative effectiveness of various program designs with any validity. It is clear that those conducting programs for continuing education in medicine are not knowledgeable about how learning occurs in adults or the conditions essential to achieve learning, nor are they skilled in the design and management of instruction.

PATTERNS OF INSTRUCTION

While no one technique can be thought to outweigh all others in importance, those which facilitate the immediate application of knowledge are generally considered to be superior to those in which the learner is a passive recipient of information. In continuing medical education one of the greatest problems has been the excessive use of non-participative or didactic techniques.

In 1940, Rappelye (227) stated, "too often postgraduate medical instruction has been given solely by didactic lectures...while didactic lectures are valuable, demonstrations, firsthand experience under guidance, and conferences are the most successful forms of teaching. Any well conceived program should stress these methods". This recommendation, variously expressed, was repeated by Norwood (174), Vollan (256), Dryer (79), and in many other reports. In 1957 the Council on Medical Education incorporated the recommendation in its Guide, along with a lengthy explanatory section on specific ways to increase participation in learning (65).

In the meantime, courses reported in the Annual Listing have consistently publicized the use of a wide variety of participative techniques. Thus the Council's review of the 1964-1965 Annual Course Listing revealed that of the 1,529 courses listed, only 22 percent specified the use of solely didactic formats defined in this survey as "the lecture, the lecture and brief discussion period, or these plus panel discussion and audio-visual aids" (57). Using the same restrictive definition, of the 2,016 courses listed in 1969-1970, roughly 20 percent indicated the use of only non-participative techniques. All other specifying the lecture and such things as the seminar, laboratory work, or clinical conferences (59).

These figures alone are misleading, since the majority of courses in continuing medical education are both short term and for large groups. When enrollment reaches the hundreds, and time is limited, it becomes extremely difficult to incorporate a variety of techniques which would facilitate active learner participation (57). It is not surprising therefore, that in actual practice, while the purely didactic format is no longer reported (220), the majority of sponsors still make use of the lecture, symposia, panel and other didactic techniques (129) (267).

The Council's survey in 1956-1957 revealed that a significantly larger proportion of courses sponsored by medical and specialty societies used solely didactic techniques (57). More recent accounts suggest that the situation remains relatively unchanged, but the structure and quality of programs is said to vary considerably according to the particular society involved (263). Thus, the California Medical Society is reported re-shaping its programs to facilitate greater physician participation and in 1968, seven regional postgraduate institutes were held with 885 participants but with a faculty-student ratio of 1:10. Similarly some of the national medical conferences and conventions are also reported using more small group methods such as seminars or clinics (230) (263).

Rhue (220) reported that in 1963, 43 percent of the responding medical schools indicated that they were using the lecture alone or lecture plus question period; 21 percent live clinics; 20 percent group conferences and seminars; 9 percent laboratory work; and 7 percent bedside rounds. A more recent unpublished survey of Canadian medical schools reveals similar findings (241).

In both Canada and the United States, the expansion of regional programs suggests that greater use will be made of small group seminars, specialised clinical practice and other more participational techniques in the future (235).

Of the specialties, psychiatry has consistently offered the greatest number of courses with enrollment limited to small groups (arbitrarily defined as any learning group with 25 participants or less) and, as previously noted, it makes the greatest use of intermittent scheduling (59).

SMALL GROUPS

The small discussion group referred to variously as the seminar or clinical conference, is widely used in continuing medical education but, as previously noted, surveys disclose that many physicians prefer the formal lecture. Sheeley (226) reports an experiment in which an institution offered the same psychiatric course simultaneously by two different methods: a series of lectures and a series of discussion sessions. The lecture series had over 25 registrants while the discussion series attracted none. Since acceptance and active participant involvement are two primary factors in the effectiveness of the discussion group method, it may be useful to illustrate its use.

Psychiatric Case Seminars:

In reviewing the varying results of a psychiatric course for non-psychiatrists held in three Washington counties over a three year period, Stuen and his associates (239) concluded that many physicians are not capable of taking part in the free give and take of the psychiatric seminar which can be a traumatic experience initially. They recommend beginning with a didactic approach then gradually shifting to the study of case materials and the use of discussion. In Brooklyn, Brody (31) found that by keeping the group under ten, even the most "diffident physician actively participated in discussion."

Reporting on the psychiatric case seminar used in the four state Utah project, Mead and Fishman (151) concluded that the degree of physician participation was directly related to his familiarity with psychiatry, thus those physicians who most needed help with their cases were least likely to receive it. He also concluded that concentrating solely on cases from the physicians' practice resulted in insufficient preparation in basic methodology so that the Utah project was modified to include lectures as well as case oriented discussions.

To circumvent the problem of a physician's reluctance to discuss case problems in the psychiatric group setting, the program in Elmhurst, New York incorporated an hour's consultation service prior to each seminar, as well as offering individual psychiatrist consultations by appointment (22).

Commenting on the current widespread use of their original psychiatric case seminar technique, the Balints have emphasized that "such ventures, no matter how greatly modified, require much more time than the popular week-end G.P. course" (17).

Clinical Conferences:

One of the more intensive types of clinical conferences reported is the consecutive case conference (CCC) devised by the American Heart Association. In this, a panel of experts analyzes the charts of ten patients consecutively discharged. The physicians are required to account for their conduct of each case as it comes under review. Although Williamson and McGuire (270) stress that the purpose of the CCC is educational, namely, to provide "an opportunity for physicians to reflect back on their own performance and to gain insight into the management of the case with the help of acknowledged experts", most writers agree (254, 263, 282) that it requires considerable ego strength on the part of the practising physicians. A study by Williamson and McGuire (270) which compared the relative effectiveness of the CCC and the lecture in improving clinical judgement, found "no overall significant difference as tested by simulated patient problems six months after completion of the instruction."

More successful programs using this approach have stressed the anonymity of individual physicians and focussed on group problems and group problem solving (97, 161, 235). Vaneslow (254) quotes Slee as saying that some medical directors have committed "professional suicide because they failed to take into consideration the worries of the medical staff regarding the possible consequences of a program of this type."

Far less threatening and therefore widely used in community hospital programs is the clinical conference using the physicians' own case material as a basis for general discussion. Cudmore and Tippett (67) reported a preliminary study that compared the results when one group engaged in extra preparation prior to a visiting teacher program and another did not. Follow up interviews with physicians revealed that the amount or preparatory work undertaken by the two groups did not differ significantly despite the extra encouragement given to the experimental group.

At McMaster University a time log is kept to determine whether there is a progressive change in the amount of discussion time used by the visiting faculty versus the learner group. Results to date have shown no significant increase in the time utilized by the practising physicians participating in the program (11).

Demonstrations; Supervised Clinical Practice:

In psychiatry a number of courses are reported which combine the case conference approach with patient demonstrations, return demonstration, and supervised clinical practice. In these programs feedback provided through the use of the two-way mirror and/or vidoetape serve as the basis for group discussions (26) (28) (274). Also reported from this field are successful uses of psychodrama and role playing (26). A typical example is that described by Levinson (140) in which the physician participants re-enact patient situations prior to and following their clinical experiences. Fleisher (98) reports that at the University of Southern California, professional actors have been trained to play the role of patients. This device has been developed further at Michigan State College and the University of Colorado where preliminary work indicates a fairly reliable degree of objectivity on the part of the actors, thereby suggesting that an assessment of student learning could be possible.

In contrast to the foregoing, Kern _et al_ (130) at Johns Hopkins University have described an experimental project in community psychiatry using what they call "The Demonstration Week" in which practising physicians experience the same unstructured field work as that used in training residents. This has been evaluated by physician responses to questionnaires which suggest that this technique is placing responsibility on the physicians for their own learning and, in an ambiguous situation requiring frequent changes of style and roles, is capable of fostering self-learning and an attitude favourable to implementing change.

A number of programs reported also provide evidence of a movement from the classroom to the clinical practice field. Richardson (202) described a visiting teacher program conducted in one small community hospital in Pennsylvania in which a consultant allergist visited the allergy clinic every two weeks. At this visit, specialized techniques were demonstrated. The local physicians practiced the techniques under supervision and formulated therapeutic plans for selected patients. Between clinic sessions, the local staff physicians implement the proposed treatment plans. It is the aim of this program to decrease gradually the number of consultant visits and increase the transfer of responsibility to local physicians.

Similarly, St. Justine's Children's Hospital in Montreal has reported a consultation service in which two to three pediatricians spend two days in a community hospital. In the morning they meet with family physicians and do ward rounds, reviewing all cases. In the afternoon they see outpatients whom the family physicians present for examination and consultation. According to Rosier (215), this experiment is proving fruitful, "not only in continuing medical education, but also as a way of providing the public with the services of a qualified consultant."

Goldfinger and Federman (106) have described a successful refresher program in which three general practitioners served as housemen in the emergency department of a teaching hospital while receiving formal lectures and supervized clinical instruction on the latest intensive care techniques. While this program illustrates the typical traineeship in most respects, what is of particular interest is that the emergency nature of the ward responsibilities automatically defined the physicians' real learning needs. On the other hand, Brown et al (33) described an experimental project at Pacific Medical Center designed to retrain inactive physicians in which it was found that the conventional traineeship program was inadequate for a group who were not only reluctant to assume patient responsibilities, but also required a systematic review course using didactic instruction. They recommend that the curriculum for physicians in this case should consist of two phases: first an intensive review course on basic aspects of clinical medicine and second a program of supervised patient contact with a gradual assumption of responsibility.

The only report of an ongoing inservice training program encountered in the literature was that described by Jampol and others (124). Sponsored by 60 physicians in group practice, this program utilized small group bedside sessions with emphasis on clinical diagnosis and the management of the participant's own patients. A follow up medical audit after two years indicated that, in general, "more appropriate laboratory and X-ray studies were being ordered in problem cases, with less tendency to initiate therapy before diagnostic studies." Consultant specialists also felt that better patient assessments were being performed prior to referral and that referral notes displayed a fuller understanding of the problems involved.

Using a simulated coronary care unit at the Pacific Medical Center, the Washington/Alaska RMP is conducting regularly scheduled classes on coronary care for multiprofessional health personnel. The equipment used for classroom instruction and which is available for loan to other centers conducting similar programs include: tapes and monitors for teaching the arrthymias; A.V. presentations (slides; film cartridges; and filmstrips) on the care and treatment of heart disease; and computer programming on various coronary care topics. In conjunction with these classes, consultative services are provided and postgraduate preceptorships are arranged for physicians (261). This program has been rated so highly that other RMP are reported developing similar or modified programs (252).

LARGE GROUPS

Instruction provided to large groups must focus on techniques which will enhance participant interaction. Despite the widespread use of large groups, there are few studies reported that involve such groups. The two descriptive studies selected for this review are particularly informative.

Harshbarger (112) investigated a community mental health workshop attended by some 80 individuals from various health professions. He had participant observers gather data on the pertinent issues discussed in the small buzz groups and a comparison was made of the observers' summaries and the reports made by each buzz group to the total group. Their findings revealed that while stimulating and meaningful problems were raised in the small group sessions, these were not reported back to the total group. Instead, "professional overpoliteness" characterized most of the reports. This study concludes: "If workshops are to be creative forums for new ideas, the traditional roles of the various professional participants must be disrupted." The recommendations stress the need for more effective feedback mechanisms such as that provided by participant observers who would ensure that the essential contrasting professional viewpoints would be relayed to the larger assembly for further discussion and clarification.

Schlesinger and Feil (221) reported a questionnaire evaluation of a three day symposium on epilepsy presented to a diverse group of physicians and other health workers. They found that the highest mean rating was given to the didactic format and the lowest to exchanges between speakers, panelists, and the audience. They also report that there was a discrepancy between the objectives of the participants and the content of the program. Furthermore, while general practitioners were relatively satisfied with the program, specialists expressed dissatisfaction with the broad coverage of subject matter. The nurse participants expressed a high degree of interest in all topics yet, the author noted, "the subject matter was geared to physicians and much of it was only indirectly relevant to the nurses' interests." One may infer that the findings of this study merely reiterate one of the basic problems inherent in large learning groups--"How wide a net should be cast, and how large should the opening be?"

MASS MEDIA

The radio, television, and the telephone are three of the most ubiquitous communication devices in North America. All three of these have been used for many years to diffuse new medical information to physicians but it is only recently that they have been adapted to provide systematic instruction. These media provide a way of extending the range of an instructor to many groups and obviate the necessity of forming a specific instructional group at a specified location with an instructor present in person. In some respects, they have been used more extensively in continuing medical education than in any other subject area. This is due, no doubt, to the fact that the potential participants are clearly identified and the motivation to learn is generally high. Unfortunately this pattern of instruction has not been studied adequately.

Radio Conferences:

A most noteworthy innovation in continuing medical education has been the two-way radio conference pioneered by Woolsey at Albany College in 1955 (279). In the typical program, physicians gather around a combination transmitter and receiver set located in their community hospital. Following a brief lecture by medical school personnel, physicians in the participating hospitals take turns in submitting questions and comments to the lecturers. Frequently, slides and other supplementary materials are distributed to the hospitals in advance to be used in conjunction with the program. Initially, 21 hospitals were linked with the medical college. In the fourth year of operation, five New England Medical colleges and their affiliated hospitals were participating in the network. Physicians in affiliated hospitals were provided with an opportunity to listen and to direct comments and questions to faculty experts from six different medical colleges. In 1963, Ebbert (80) estimated that approximately 1,298 physicians in 36 hospitals were being reached by these radio conferences. In addition, the number of uncounted physicians who listed to the programs was thought to be considerable. The cost to each participating hospital in the Albany Network is $700 per year per hospital. This fee covers more than one hundred programs and the supplementary instructional materials. Woolsey (277) also describes a new program format being offered co-operatively with six medical schools in 15 participating states. This program is presented as a medical case which the physicians first analyze on a special form listing a variety of possible tests and procedures. After each participant has decided on his diagnosis and treatment, the instructor analyzes the case and presents his approach to the problem. When the presentation has been completed, physicians discuss the case management via two-way radio. Preliminary studies suggest that physicians become more skillful in their diagnosis after experience with this approach to case management.

Farber (95) estimates that more than 800 physicians within a 500 mile radius are participating in the programs conducted by the University of California School of Medicine. More than 1,510 copies of lecture notes and case presentations are mailed each week to participating hospitals. Many hospitals tape the programs so that physicians may hear any broadcast at their convenience. To date, the findings of the California experience show that the greatest response has been from general practitioners. Farber concludes: "medical radio conferences have been a major step forward in bringing the most recent concepts into outlying districts with a minimum of expenditure."

There have been few, if any, meaningful evaluations of the effectiveness of two-way radio conferences. The only objective evaluation found was that undertaken by Richardson et al (201) in 1963. This study attempted to evaluate a radio series through the use of before and after tests for knowledge gain. Using a sample of 70 volunteer physicians who had participated in the program, and a control group consisting of 12 non-participants, Richardson was able to show a statistically significant mean score difference of 1.6 between the first and second tests for the experimental group, and no statistically significant difference for the control group.

The medium of radio has scarcely been used in Canada for continuing medical education. The only report of a viable program encountered was from the University of Alberta. In 1968, a series of twenty-one radio seminars were offered. These were considered to be successful, so it was planned to extend the broadcasts (7). As a part of its proposed Multi-Media Information Retrieval System, the University of Saskatchewan plans to establish a province-wide radio-telephone series in co-operation with the C.B.C. (13).

Medical Radio Network:

Aitken (4) reports the establishment in Boston of a Medical Radio Network which broadcasts musical programs into the participating physician's office twelve hours a day. The music is interrupted every hour by a fifteen to thirty minute medical program to which the doctor may listen, with three opportunities each day to listen to each of the four programs offered.

Telelectures:

A pilot project to provide continuing education to physicians via telelectures or amplified telephone at the University of Wisconsin has been described by Meyer *et al* (156). Initiated in 1965, seventy hospitals are linked by private telephone lines to the University Medical Communication Center. The general program format follows that used with the two-way radio conferences, including a brief lecture with slides followed by a discussion period. Participating hospitals take turns submitting questions and comments. In the 1967-68 academic year 80,000 hours of instruction were given with "neither faculty nor students moving away from their communities or their health care responsibilities." Fortney (101) reports that the Missouri RMP has established a similar telephone network linking many of the remote hospitals in Missouri with the university's medical center.

The South Carolina RMP is offering consultant conferences in the field of malignant diseases of children via statewide telelectures. Plans are underway to make videotapes of patients as well as of special diagnostic and therapeutic procedures which will be sent to each of the participating hospitals. Simultaneous viewing will then be possible during the conferences (166).

In contrast, Lyons (143) reports limited success in the Central New York RMP experiment with telephone networks. Among the many technical problems discussed, he notes that faculty unfamiliar with the method are often uncomfortable talking to an unknown audience and that physicians are equally reluctant to ask questions. He notes further that nurses and medical technicians have made greater use of the network than have physicians.

Television:

During the past fifteen years, television has probably received more attention than any other medium. Referring to its use in continuing medical education, Ohliger (176) states, "Mass media courses for the medical profession are blossoming all over the map, but mainly in the United States," and he quotes Moses as saying, "Educational television has proven to be immensely useful in keeping doctors abreast of advances in medical practice..."

Despite all the publicity surrounding its varied and widespread use, closer scrutiny reveals that the use of television has spread rather slowly (193). Moreover, much of what is in use is still experimental (111). Since Harris (111) has reviewed so recently the published literature on closed circuit systems, this report is concerned largely with the use of open circuit, standard receiver, and scrambled or encoded broadcast television.

In 1954 Warner and Bowers (259) reported the first use of open circuit television in postgraduate medical education at the University of Utah. The program consisted of a series of medical clinics and was telecast over a commercial station in Salt Lake City, that had a range which included 75 percent of the practising physicians in Utah. In order to minimize public viewing, off air time was used and publicity was restricted to direct mail to the physicians. To promote participation, an unlisted telephone was installed and physicians were encouraged to place questions by collect calls. The success of the experiment was attested by favourable physician ratings of the program, high participation by more rural physicians, and no adverse criticisms from the lay public. This resulted in the regular use of open circuit television for continuing medical education by the University of Utah. After that experiment, Wayne State University, the University of Texas, the University of Oklahoma, and others began telecasting similar programs on an experimental basis frequently using tapes made at the University of Utah (43).

Commenting on the instructional techniques used in these early programs, Castle (43) notes:

> While the method of presentation has varied from illustrated lectures, panel discussions, question and answer periods, and demonstrations of procedures and patients...the approach most frequently used has been informal discussion between two teachers with liberal use of visual aids to demonstrate and emphasize salient features of the presentation.

A slightly different approach at the University of Florida was reported in 1963 by Michael (158). This program consisted of a grand rounds type of presentation in which three local physicians served as one half of a panel in one studio in Jacksonville some sixty-five miles away, with the other half consisting of faculty members located in the studio at Gainsville. A micro-relay system provided an opportunity for an exchange of questions and answers following a case presentation in the Jacksonville studio. This approach was felt to "bring the university to the bedside teaching" and it was concluded that this type of conference was highly desirable.

In Pittsburgh particular efforts have been made to involve local hospitals. In 1962 a series of regular weekly broadcasts consisting of "live" grand rounds and closing with a brief medical newscast was initiated in 29 community hospitals. In 1965, Moses and Wolfe (167) reported an expansion of this program to include 63 hospitals extending throughout the tri-state area of South Western Pennsylvania, Eastern Ohio, and Northern West Virginia. In 1967, 70 hospitals were participating in this network (176).

A televised lecture series called "Boston Medical Reports" was launched in 1964 taking as one of its principal objectives, "the regionalization of medical education by means of television, expecting it to become a part of a proposed university without walls." In this network were stations in Maine, New Hampshire, Massachusetts (209), and more recently, Rhode Island and Vermont (176). One noteworthy element of the series was the "Physicians' Notebook for the Boston Reports." Intended as a promotional attraction, prior to the telecasts a copy of a three ringed notebook with informative materials announcing the series, its purpose and format was mailed to all potential viewers in

Maine. Subsequently, supplementary literature accompanying each lecture was sent to physicians to add to the notebook which could then serve as a reference source. Another important element of this project was the effectiveness studies which "provided continuous feedback to program planners so that they could modify future programs."

Although attempts at an objective evaluation of the series were hampered by limitations of the research designs, it was felt "that Boston Medical Reports did provide a review of medical topics and for some viewers, significant learning did take place." Moreover, it was felt that "the series launched a strong movement toward a greater use of mass communication techniques in New England," including the initiation of a similar series entitled "New England Dental Reports for Continuing Dental Education." In addition, it pioneered an effort at regional co-operation and presently a special package of 42 programs entitled Medical Reports, Boston, Buffalo, Pittsburgh, is being offered by the Eastern Educational T-V Network to its member stations.

The total cost of each program was approximately $4,000 or about $4 per potential viewer and between $10 and $12 per actual viewer in Maine. Increasing regional distribution decreases costs and the estimates of the number of viewers per program range from 9 percent to 38 percent of the potential physician participants. Robertson and Pyke (211) conclude: "Size of target audience must be weighed against cost, including time and effort to produce and broadcast television programs...If the target audience is small, television, a mass medium, may be less monetarily efficient and educationally productive than other instructional methods."

The Oregon Medical Association in 1966 sponsored a broadcast television series produced by a committee of seventeen members of the association. By placing this reponsibility on its active membership, it was hoped that practitioners would become more involved in planning their own continuing medical education. The series entitled "The Oregon Medical Review" was broadcast weekly from January to April and focussed on content relevant to the role of the first contact physician. A study was made through mail questionnaires and follow up telephone interviews, using a representative sample drawn from the potential viewing audience of 1,651 physicians. This disclosed that while the first five programs attracted relatively large numbers of viewers, interest was not maintained. The maximum number of physicians viewing any one program was 10.4 percent of the membership. From responses to the telephone interviews it appeared that the involvement of the membership of the Association in programming was achieved in theory only, perhaps "because the television committee...in their concern to get the job done, permitted the development of an organizational structure that was just as distant from the average member and involved just as hierarchic patterns as the sponsorship of other programs of continuing medical education." Moveover, it was found that the program planners frequently used individuals who were unable to adapt to the television medium. Even more important, was the failure to identify specific instructional objectives for each program. In conclusion, Meighan and Treseder (153) noted: "The medium provides a means whereby programs of continuing medical education may be distributed widely; it seems to offer some outstandingly attractive features. However, further study of educational effectiveness is required to show that these outstanding attractions are not illusory."

In 1963, the New York Academy of Medicine began presenting on open circuit television its weekly Clinical Science Seminars for physicians. The purpose of this project was "to ascertain the acceptability and effectiveness of television as an additional medium for continuation medical education in a metropolitan area." Through repeated polls, the size, composition, and opinions of physicians participating in the program were studied. In addition, the study sought to determine the impact of the program on its audience by means of an information test which was administered to 100 viewers and 100 nonviewers covering a period of from four to eight months after the presentation of selected programs in the series. While the findings of this study were somewhat clouded by time variables, the results indicated that no specific learning could be demonstrated (147). Cumulatively, polls revealed an audience averaging only 305 or 4.8 percent of the potential viewers that was attracted to the series regularly (148). Considering the expense and effort, so small an audience did not justify continuing the program, so it was terminated in 1968.

Fahs and Miller (94) described the evaluation of a program broadcast in the state of Minnesota between 1967 and 1968 in which nine programs of the series were analyzed from three points of view:

1) the accuracy and recognition of scientific information; 2) the success in communication; and 3) the relevance of the programs to the care of patients. Four panels of physicians who were specialists in the areas covered by the programs were selected to make the evaluation. A comparison was made also of the actual and potential viewing audience "with information on why physicians did not watch and what insights came to those who watched."

Since objectives for specific programs were not clearly defined, the panelists were hampered in their attempts to evaluate them. In general, the scientific content of the series was judged to be adequate, reliable, and accurate. With respect to communication and technical production, the comments of the panels were unmistakably negative. As one panelist put it, "These gentlemen communicating with each other about their own habits of practice just don't convince me that I want to emulate their style." Another concluded, "One program could have been put on audio alone with no need for vision. The appearance of the panel, unless its personalities are dynamic, is less than worthless."

Comments from viewing physicians suggested that "a considerable amount of program testing occurred, and where one program was useful to the physician in his practice, he tried others. Conversely, when he received no benefit he quit watching. And the more programs the physician saw, the clearer it was that he was getting something out of the series." The major reasons given by physician for not viewing were: not knowing of the program's existence, forgetting to watch, or being too busy. Some also indicated that they preferred to watch the ten o'clock news. The authors conclude:

> No one doubts that continuing medical education through television has potential. However, few believe that its full potential is presently being utilized, and virtually all are willing to experiment to some extent. This evaluation reaffirms such generalizations and hopes that continuing effort be applied to both new and old methods.

A number of medical centers in Canada have reported some experimentation in the use of broadcast television for continuing medical education (11, 119, 253). The general impression gained from the literature is that most Canadian productions have followed the typical American format: namely, lectures or panel presentations followed by a brief question and answer period. As in the United States, the problems of technical production, costs relative to viewership, and difficulties in evaluating the worth of televized programs, have been identified as the major obstacles in the use and expansion of the medium (119, 253).

Encoded or Scrambled Broadcast Television:

While no studies encountered to date have revealed specific reactions from lay viewers, the question of complete professional privacy is still being debated within the medical profession (263), and this has resulted in a network of medical schools and affiliating hospitals in California using scrambled or encoded broadcast television (30) (165).

Under this system, the picture appears on the standard television screen, but in encoded form thus preventing public viewing. Decoding or unscrambling is accomplished by a modified receiver. Because these decoders are still relatively expensive they have been placed only in the affiliating hospitals in the California experiment.

This is believed to have several advantages: 1) it makes the community hospital the center for continuing medical education, 2) it makes feasible an accurate record of the number of viewers of each program, and 3) it makes it possible for the universities to charge a tuition fee for participation in the network, which in turn makes superior production techniques possible (30).

The success of an initial pilot project linking 15 community hospitals with the University of California in 1965, resulted in the expansion of the number of participating hospitals and the merging of six major medical centers and their television facilities to form the Medical Television Network (MTN) for the production and distribution of televized programs. At the end of the second year of broadcasting, Brayton _et al_ (29) reported 72 hospitals participating in MTN with an additional 18 hospitals participating in a video tape distribution system whereby hospitals received the programs on one inch videotape which could then be played on relatively inexpensive video recorders. Through a contract with the United States Public Health Service, the MTN is currently operating with a professional staff and facilities, consequently, the quality of the programs has been greatly improved and the tuition charged hospitals has been lowered substantially. Attendance data shows that MTN broadcasts are reaching some 750 physician viewers each week and that approximately 28,000 hours of instruction are provided in the 38 programs offered yearly. Since most of the programs have generalists as their target audience, it is not surprising that the greatest number of viewers have been general practitioners and internists, with specialists in the narrower specialties being the least motivated to participate. In 1968, Brayton et al (30) reported that:

> the MTN videotape reduplication and distribution system has been re-organized to combine the Southern California television resources with those of a similar encoded network in San Francisco for Northern California...The resulting videotape distribution system, now called the California Medical Television Network will reduplicate and pool the outstanding programs broadcast for medical and paramedical education in each area and regularly distribute these to participating hospitals...In this way, the combined medical faculties in the most populous state will form the academic base for continuing medical and paramedical education using the newest television modality.

Despite such optimism regarding the future of encoded broadcast television, in a recent report of an evaluation of four programs sponsored by the Northern California Network, Mock et al (165) concluded:

> While most of the assessment techniques in this study encountered serious sample depletion, given this limitation... virtually no measurable changes in either behavior or information level were found which could be directly attributed to the programs...It was noted that two hospitals changed their infection control procedures, but does this make the series worthwhile? The answer to this question would require an objective comparison between postgraduate medical television and other teaching media. The studies which will provide an answer to this question remain to be done.

More pointedly, Lauler (55) concludes: "The exploitation of a given medium without leveraging its advantages in juxtaposition to other media doomed the television medium to failure...The major limitation of the production of television or movie material resides in the software aspect."

Slow Scan Television:

An experimental project currently planned at the University of

Wisconsin will use slow scan television carried by a telephone and radio link from the classroom at the Medical Communications Center to four small community hospitals with reception facilities. As described by Meyer _et al_ (156):

> Using this medium still snapshots are transmitted over ordinary telephone wires thus obviating the need for expensive co-axial or microwave relay systems. Special receivers store the pictures and release them approximately eight minutes later...Thus the participants in the community hospitals have the live voices, the slides, and other visuals used during the conference as well as the still pictures.
>
> Other attributes which make slow scan television attractive are:
>
> Its ability for random access information retrieval so that 5,000 hours of instruction and 10,000 visuals can be stored, retrieved, and shown in remote points. In addition, it holds the ability for hard copy printout at remote locations so that printed information inserted at one end of the system can be faithfully reproduced at the other without teletypewriters, a sort of long distance Xerox Machine.

SUPPORTING DEVICES

The supporting devices reviewed here are those educational technologies which have found their greatest use as quick information sources, or as a means of self instruction.

Motion Pictures; Videotapes:

Probably the most significant development in the area of films has been the establishment of a Single Concept Film Service offered by the University of Wisconsin. Community hospitals are provided with a small portable projector along with single concept films on new medical techniques which are on loan for six weeks. Each film runs from six to ten minutes and contains only essential information. When the user presses a lever the picture and sound start immediately. Since the film is self re-winding, he can view the film a second time merely by pressing the lever again. Meyer _et al_, (155) report that a series of six films are in circulation among 47 hospitals in Wisconsin. A recent survey based on approximately 1,600 questionnaire responses from practicing physicians revealed that 93 percent of the respondents felt that the films provided useful medical information.

According to Wenrich (263) pharmaceutical companies have also produced a number of films and TV kinescopes which are loaned to hospital and medical groups. The Upjohn Company has produced a series called Grand Rounds on 16mm film which is available through its regional offices. Similarly, the Roche Medical Laboratory produces videotapes for its "network for continuing medical education" which includes hospitals across the country.

Audio-Tape Recordings and Disc Services:

Probably the oldest and most established tape recording subscription service in operation is Audio Digest, a non-profit subsidiary of the California Medical Association. Oakley (175) reports that some 30,000 tapes are sent each month to subscribers in the United States, Canada, and overseas. These tapes, ranging from one half to one hour in length, represent edited portions of lectures, panels, discussions, and symposia published in current literature. The areas of medicine covered by this service include general practice, internal medicine, surgery, obstetrics and gynecology, pediatrics, anesthesiology, and opthalmology. Important meetings are also taped and sent to subscribers. Wenrich (263) reports that Excerpta Medica has begun producing "Voices of Medicine" which provides weekly tape recordings of abstracted literature and feature presentations on selected subjects. The American College of Cardiology, in collaboration with the Radio Corporation of America, has begun a monthly tape service called Access Library Service focussing on subjects which have the greatest relevance to the practice of cardiology (146).

While the aim of these services is to provide a way that busy practitioners can acquire information by listening in their homes or while driving to work, reports suggest that only a certain proportion of physicians are attracted to this process (4, 37, 263). A study reported by Aitken (4) found that of the 655 tapes requested and sent out in 1961, 29 users who took ten or more tapes each year used 513 of the total. Another finding of interest was that 60 percent of the tapes requested went to general practitioners in the country or small towns. In 1962, the Canadian College set up a disc service using twelve-inch long-playing discs in which the members of the service retained their own recordings. This proved extremely popular, and by 1963 a number of listening groups had formed.

According to Harris (111), Smith and Holst Incorporated in California have developed a series of illustrated medical lectures using both film strips and tape recordings produced by Loma Linda University School of Medicine. These lectures range from anesthesiology, internal medicine, obstetrics, cancer, and cariovascular disease to urology.

Abrahamson and his colleagues (3) at the University of Southern California report a recent evaluation of a special self-instructional device combining a seven inch record with a film strip. In this study, 100 general practitioners selected by stratified random sampling in the 11 Western states served as the experimental group while another 100 served as controls. Fifteen programs were circulated to the physicians participating in the study. Assessment procedures included: 1) post tests of information; 2) pre-and-post project questionnaires assessing "communication behavior" and program acceptability, and 3) interviews of a sample of the physicians to validate questionnaire responses and to augment the data. Analysis of the data revealed a significant acquisition of information on all programs; high acceptability of the approach, but no significant change in "communication behavior" (defined in this study as "the way in which physicians attempt to obtain continuing education").

In keeping with his basic philosophy that learning should be both fun and challenging, Woolsey (277) is developing a medical jukebox which will offer physicians 160 six-minute 33 1/3 rmp records, totaling 16 hours of instruction. To illustrate the spoken word, two dial-access Carousel projectors have been integrated into the jukebox mechanism so that two by two inch color transparencies are automatically synchronized and projected. If the doctor has a question which the jukebox can not answer, a tape recorder will record the question with the physician's name and address, and it will then be answered by return mail. Another interesting feature will be that the user will be asked to evaluate the material presented at the conclusion of each record, rating it---very helpful; helpful; slightly helpful; or no help, by punching an appropriate button on the machine. Also being considered is the inclusion of an option that would require the physician to drop a quarter in the slot in order to get his program. At its conclusion, he would be asked a relevant question and offered four multiple choice answers. By pushing the appropriate button he would indicate his choice and if his answer is correct, his quarter is returned.

Mediphone Services:

In 1966, the University of Wisconsin pioneered a non-computerized Dial Access service. The objectives of this project were: 1) to make available current authoritative information twenty four hours a day for use in emergency situations, and 2) as a method of updating medical information. Intended strickly as a quick source of reference each tape is five to six minutes in length. When the physician wishes information relevant to any of the 230 subjects listed in the directory, he merely dials the toll free number designated, and requests the tape. In an average of twenty seconds after receipt of the call the tape is played for him over the telephone line. A preliminary survey in 1968 revealed that: 1) such a library had equal appeal to general practitioner and specialist in both urban and rural areas; 2) a significant number of physicians used the service as long as promotion was reinforced frequently, while a small number of practitioners used the library as an established source of information retrieval; and 3) a significant percent of library ulilization was for continuing education, that is, review, or updating knowledge or gaining new medical information. On the basis of these findings, Meyer et al, (157) conclude: "Whether on the basis of popularity or evaluation data it appears that there is a sufficient degree of enthusiasm for this means of information retrieval and that the dial access library concept can be expected to experience rapid growth." Minnesota and North Dakota are linked to the Wisconsin Library using their own separate communication systems.

In Canada, the University of Saskatchewan has recently initiated a Dial Access Service. To date, "Three hundred and six five-minute messages have been received from Wisconsin and booklets listing titles have been distributed to all Saskatchewan physicians. Twenty new scripts for messages have been completed by Saskatchewan specialists and twenty more are in preparation." Utilization of the service is reported satisfactory to date (13).

The Missouri RMP has sponsored the development of a Dial Access Library which differs from the Wisconsin Library in that the system is computerized. According to Fortney (101), "this makes the service chepaer and more efficient, eliminating the factor of human error." A number of medical specialists are helping to test the system by evaluating the messages from the experts' viewpoint and advising where corrections are required. Under the Alabama RMP the University of Alabama has recently become the headquarters for a "wide area telephone system" providing live telephone consultation services for physicians in widely scattered rural and semi-rural communities and their hospitals. Called MIST, this project is reported to have served over 900 consultations requests from all parts of the state in a six month period. Brown and Uhl (32) report that both community physicians and faculty have found the system both feasible and useful.

Correspondence; Programmed Instruction:

In 1962 the journal Spectrum published an article on programmed learning along with a programmed sequence on how to read an electrocardiogram on myocardial infarction. The issue was circulated to 225, 000 physicians in the United States, of whom 50,000 replied with a "blanket endorsement of the program." As a result, a longer program on allergy and hypersensitivity was made available to physicians on request. Balson (18) reports that this program is in use in 81.3% of the American medical schools.

In 1964, Spiegel (234) reported a subjective evaluation of a course on Diabetes Control taught by programmed instruction on a teaching machine. Of the 78 physicians who completed the course, all felt it was a meaningful program. In comparing this device with other educational techniques, the physicians strongly endorsed the teaching machine approach. On the basis of post program interviews and follow-up mail questionnaires, it was estimated that two thirds to three quarters of the physicians who completed the program have modified, or will modify, their diagnostic and/or treatment practices with diabetes as a result of having participated in the course. Programmed instruction like correspondence studies, appears to have found its greatest use as a supplementary device used in conjunction with other forms of instruction (54, 59, 61).

Computer Assisted Instruction:

Computer assisted instruction (CAI) in medical education is still in its infancy. Paxton (180) reports that a number of diversified medical cases have been computer programmed by the University of Illinois. A physician with an interesting case can question the computer in his own words and the imaginative programming enables the computer to pick out key words in the doctor's statement for which it then provides the the appropriate answer. Also under development are several computerized self-testing programs. Although these are still experimental, it is planned that they will be expanded to include continuing education hookups with some outlying hospitals.

Ohio State University has some tutorial evaluation programs routinely available to medical students and by telephone lines to physicians in ten area hospitals. The equipment is less elaborate in that it uses teletypewriter terminals instead of TV display screens. The teleprinter is augmented by a slide projector with coloured slides and the computer instructs the user when to view a particular slide. The learner takes as long as he likes to examine it then types the response called for by the program.

The University of Oklahoma tested a variety of computerized teaching programs between 1965 and 1968. Harless *et al* (110) report the findings of one study involving fourteen practising physicians who attended a one week course in clinical anesthesiology in which a one hour CAI lesson was included. Data showed that the physicians' attitudes toward CAI, educational television, and programmed instruction texts were comparable before exposure to CAI. After the CAI lesson, attitudes toward CAI were significantly more positive than were attitudes towards either educational television or programmed instruction.

At the University of Southern California, Abrahamson _et al_ (3) have produced a computerized learning aid called Sim One which is a realistic mannequin upon which physicians may learn how to carry out endotracheal intubation. The computer is programmed so that the mannequin reacts physiologically to various drugs or treatments which may be administered. Continuous graphic displays show the changes in blood pressure, pulse rate, etc., thereby depicting the mannequin's responses to treatment. Wires run from strategically placed magnets and sensors in Sim One through a large cable to the computer and to the instructor at a control console through which the instructor is kept posted on the physician's progress in learning. In one study of skill acquisition, the learning rate of ten new anesthesiology residents was compared. Five of these experienced conventional instruction and five learned the technique using the mannequin. Findings revealed that those who used Sim One took an average of 30 attempts over a period of 45.6 days to achieve nine out of ten professionally competent intubations as compared with 60 attempts in 77 days for the control group. There are plans to develop refinements of Sim One for teaching other specific techniques to medical and paramedical workers. Paxton (180) indicates that the Sims "can shorten the time required to teach manual procedures in almost every phase of medicine."

Allen and Ottem (5) report three experimental programs utilizing audio response computer services. One is a drug compatability program in which the input is a pair of drug codes and the output one of four compatabilities: "yes", "no", "conditional", or "unknown." The second program is a burn formula program which calculates the proper initial quantities of electrolytes and fluid required in treatment. The third is a symptom diagnosis program that is augmented by diagnostic data in the literature.

A similar but more sophisticated computer program is reported in operation at the University of Missouri. This program, called Consider uses cathode ray tube (T.V.) input-output terminals. The major weakness is the absence of printed output which could be required for legal reasons or for a patient's record.

The cost of these programs is reported as reasonable. Allen and Ottem (5) estimate that:

> The intravenous additive program costs under 35 cents for each run plus $10 per month for program and data storage. The burn formula program which is purely computational, costs roughly 50 cents per use plus $1 per month for required storage. The diagnostic assistance program costs about 40 cents per calculation plus $2 per month for storage.

They suggest a feature which would greatly improve computer programs:

> Access to data bases from various authorities for controversial subject areas. This feature would give a computer network some

of the flexibility now offered to the physician by having several medical textbooks, journal articles, and scientific documents available on particular topics.

ORGANIZATION FOR INSTRUCTIONAL TECHNOLOGY

A number of recent articles provide evidence of attempts to create proper facilities and environments for the effective use of mass media in continuing medical education. Also being discussed and implemented are centralized systems to expedite the development and distribution of instructional materials and devices on both regional and national levels.

Regional:

In 1959 the University of Utah developed an Audio-Visual Kit which could be shipped to physicians in rural communities. Contained in the kit were medical discussions on long play records, accompanying scripts, and coloured slides. This mail service proved successful so other organizations developed similar programs (232). The University of British Columbia is developing a Mobile Van Service (164) to provide a multi-media approach to continuing education for physicians and members of the allied health professions in British Columbia, particularly those who find it difficult to leave their practices.

The Alaska/Washington RMP is developing a unit which will produce and co-ordinate all educational materials for projects in the two state region. It is anticipated that greater efficiency will be achieved and considerable money saved by centralized production. More particularly, however, the main emphasis of this unit will be to "provide up to date information to the more isolated rural physician by way of modern communications technology (138).

Cooper (63) reports the establishment of an Office of Audio-Visual Education in the Health Sciences Center at the University of Colorado. With the University's multi-disciplinary student laboratories (unit teaching laboratories), and the newly constructed Office of Research in Health Science Education, it will serve as a central source for production, distribution, and evaluation of multimedia programs for the Colorado/Wyoming RMP. Among the many educational approaches which have been explored, two proposed pilot projects are of particular interest. The first is a videotape exchange program among hospitals within the Colorado/Wyoming region whereby videotape recordings made by the clinical staff of hospitals will be exchanged on a weekly basis. The second will be the production of a series of single-concept films and filmstrips on oral cancer, the audio portions of which will be capable of alteration in such a way that the same films and filmstrips will serve dental hygenists, nurses, physicians, dentists, or patients.

The University of Saskatchewan (13) has decided that its major focus for the next several years will be on the development and promotion of improved "Information Retrieval" methods, and a four stage program has been outlined: 1) to assist community hospitals in their efforts to provide improved library facilities; 2) to encourage and assist physicians in the improvement and expansion of direct telephone consultations, 3) to establish Dial Access Telephone Library facilities; and 4) to assist base libraries in their efforts to provide rapid and efficient subject and bibliographic retrieval by both manual and automated means. Efforts to develop each phase are proceeding simultaneously.

In the Albany RMP, community hospitals are being developed as prototype learning centers for the use of newer instructional technology. These are being set up in three sizes: the smallest are for hospitals with staffs of up to twenty doctors and feature sound tapes, telephone dial access programs, radio receivers which will allow two-way radio conferences, and other related visual materials. The medium sized centers for hospitals of from twenty to fifty physicians will include in addition the medical jukebox. The largest hospitals will have videotape projectors as well. These learning centers are being established either as an integral part of the medical library or are located adjacent to a library and are under the continuous supervision of library personnel. According to Woolsey (277),

> Medical libraries can no longer exist just for the storing and retrieval of printed information. To be really useful, a medical librarian should be on hand as an instant consultant. If what you need is not immediately available, the librarian should dig it out quickly or the impulse to learn may be lost.

Similarly, Castle (41) reports that the Inter-mountain RMP staff have helped to organize the following learning resources in the major community hospitals:

Conference Room Equipped With:	Established
Usual teaching aids..........................	18
Audio playback	10
Television playback facilities	4
Two-Way Radio Connection with the University Medical Center	32
Medical Library and Exchange System with University Resources	
Audited Medical Records System, Integrated with Educational Programs (PAS MAP)	9
Medical Education Co-ordination, or Core Faculty	5

National:

As the various medical centers became increasingly involved in producing programs for television, the need for a centralized agency to co-ordinate programs and film exchanges has culminated in the establishment of a National Association of Medical Television Broadcasters in 1965 with headquarters in Utah. The objectives of the Association are: 1) to promote the use of broadcast television as a medium for continuing education, and 2) encourage wider co-operation in program planning, production, and distribution. At the moment, videotapes are readily available through the services of this Association (AMTVB) and according to Brayton et al (29), "any medical school or organization having access to an ETV station or link up with such stations can now initiate its own postgraduate medical television broadcast series at minimal cost."

The National Medical Audiovisual Center (NMAC) in Atlanta, Georgia, lends more than 93,000 audiovisual items each year to members of the health professions. The Center is said to have the world's largest medical audiovisual collection. In addition, the NMAC produces all types of audiovisual materials for health professions and serves as an international clearinghouse for biomedical audiovisual information (172).

The Medical Literature Analysis and Retrieval System (MEDLARS) is a computerized bibliographic system developed by the National Library of Medicine. In use since 1964, this system indexes the major medical journals using a computer to store the information. Index Medicus is printed directly from the computer, thus by scanning the subject section of this listing, a searcher may determine whether his field of interest is adequately covered by MEDLARS. If so, MEDLARS will retrieve the literature relevant to his specific request. Lancaster (136) reports that "over 3,000 demand searches are now formulated annually at the National Library of Medicine. Additional searches are being handled at regional MEDLARS centers in the United States, the United Kingdom, Sweden, and more recently in Canada." Although not without its limitations, MEDLARS offers the most extensive and quickest indexing service presently available on medical literature.

The Interuniversity Communications Council (EDUCOM) was organized in 1965. It represents not only the health professions, but also a variety of university disciplines equally interested in developing and sharing resources in higher education. Although beginning with representatives from eight universities, Miller (162) reported eighty-eight participating universities in 1968. Future plans of this organization include the development of a multimedia electronic network which will facilitate sharing of resources and accelerate information processing. In medicine this will provide rapid access to specialists when their advice is needed. The four criteria followed in developing the network are:

1. That it be interdisciplinary for all fields and not only for the health sciences.
2. That its services be available everywhere in the United States, and eventually, by extension, everywhere in the world.
3. That it be a multimedium network, not limited to computers or facsimile transmission of documents or television or computerized program instruction, but including all media of educational value which can be put on an electronic network.
4. That whenever feasible, all materials be available rapidly on demand, when desired by the user.

CHAPTER V

EVALUATION

Since the primary objective of continuing education in medicine is the achievement of learning that will result in improved patient care, it is necessary to evaluate program activities. As Abrahamson (2) has stated, evaluation is a "continuous process based upon criteria cooperatively developed, and is concerned with the status of, and changes in behavior of the learners." In theses terms, evaluation has not been an integral part of continuing education in medicine although it is now becoming a matter of concern. There has been an increase in the number of evaluation studies found in the literature over the past few years but most of these suffer from inadequate design and measurement so that the results achieved are largely inconclusive. Such evaluation as has been reported is principally subjective but there is a promising increase in attempts at the objective assessment of learning.

SUBJECTIVE ASSESSMENT

Next to attendance records, the most commonly reported form of evaluation is the follow up questionnaire which solicits participant opinion with regard to a program (2, 220, 241). The information usually sought includes why physicians attended, their impressions and opinions with respect to various aspects of the program, and whether they felt they achieved their objectives. Since these instruments solicit unverified subjective opinions about an educational event they are often referred to as a "hapiness index" or opinionnaire. While such instruments may be useful in planning future courses, they provide no evidence that learning really occurred. Donnelly and Natfulin (77) report an experiment which illustrates this point:

> We recently conducted a somewhat limited study of the validity of the so-called happiness index. An actor was hired and programmed to speak incoherently on a topic of interest to medical educators...His name, erroneous titles, and degrees were included on the program seminar. He gave a highly technical presentation which consisted of nothing more than mere double talk. He spoke on a subject about which he knew nothing. An analysis of the substance of his presentation indicated that it consisted primarily of unrelated examples and a few good jokes. Following this very "entertaining" lecture, the audience (consisting primarily of instructors...) was administered a replica of one of the hapiness questionnaires...Without exception the group rated the lecture and ensuing question and answer period highly in every respect. They found it interesting, informative, and stimulating...

In other words, the medical educators in attendance were very happy with the instructional experience despite the fact that the programmers had minimized the learning component. While this is obviously an extreme example, most writers agree that it is not sufficient to consider a program successful simply "because attendance is high and complaints are low" (27). More recently, various modifications of the happiness index have been reported. Levinson (140) evaluates his one-week health seminars by having participants rate each lecture and all other aspects of the seminar on a five-point scale. They are also asked to comment freely about the experience and to add additional comments to the evaluation sheet at the end of the week. Six months later, through a mail questionnaire, each participant is again asked to evaluate the experience. This time he is asked what he thinks he learned at the seminar that was most useful to him, what was least useful, how he applied what he learned, and what problems he had in their application. Although Levinson is not entirely satisfied with this procedure of evaluation, he reports constructive feedback and specific examples of changes in medical practice which physicians have attributed to course attendance.

From the field of public health, Parlette (179) reports experimental studies using paired questionnaires, one answered by the participant concerning change in himself as he perceives it, and the other, by his superior. The hypothesis is, "that the deeper the individual insights are, the more likely change will occur and be recognized by his superiors and therefore the participant's reported change is more valid."

Another variation of the opinionnaire is the use of a personal interview with small randomly selected groups of participants prior to and following each session of the program. Meyer is quoted by Vaneslow (254) as saying that "this technique is exceedingly useful in eliciting pertinent and candid comments from participants."

Dohner _et al_, (75) devised an instrument which can be used as an index of the effectiveness of short courses. This is a motivation scale, consisting of a set of bi-polar adjectives designed to assess the degree of enthusiasm or motivation as judged by the learners' perceptions of the general value and relevance of course objectives and content in meeting their learning needs. Evidence of the reliability of the instrument was provided by correlating each scored item on the scale with participants' questionnaire responses. Although the results from one preliminary study indicate that the scale with further refinement could provide a valid instrument, the extent to which the scale predicts changes that actually occur in a participant's subsequent behavior has yet to be validated.

Although the "happiness index" or opinionnaire has no validity or reliability it is exceedingly popular with program directors even though it is of no real value as a judgement on a program. It would be advantageous if all of those in continuing medical education could work together to develop some standard objective instruments to assess opinions about their programs. This could be done with less trouble and expense than is now wasted individually on invalid subjective measures.

OBJECTIVE EVALUATION

The use of objective measures for evaluation is increasing. Such measures can provide hard data to assess whether programs are achieving their objectives and enable program planners to work with greater security that the evaluation has some validity. Objective instruments have been constructed to measure specific content material acquired, attitude development or change, feelings about instructional activities, job performance, and patient care.

Testing for the Achievement of Learning:

The pre- and post- design using paper and pencil tests has become fairly common in continuing medical education. A number of writers consider that the practice is reasonably well accepted by physicians (244) (271). Since most of these tests are teacher-made and based on specific information the practitioners are expected to learn, the results in no way identify what the physicians actually do learn. Furthermore, studies have found that neither knowledge gain nor satisfaction necessarily ensure desirable changes in behavior.

An evaluation of an intensive psychiatric and neurology review course reported by Natfulin and Ware (170) is interesting in this regard. In this study, the experimental population consisted of twenty-two psychiatrists enrolled in a program. Twelve of the group were studying for specialty board examinations while another ten constituted a control group who were studying for certification through traditional self-study methods. The four evaluation techniques used were: 1) simulated American Board examinations; 2) multiple choice examinations; 3) interviews; and 4) satisfaction questionnaires. As hypothesized, those in the course passed the board examinations at a proportionately higher rate than did the controls, and expressed a higher level of satisfaction with their board preparation. There was no significant change in the mean scores for those board examiners and experts who also took the tests. On the basis of these findings, these researchers conclude:

> While the debate over peer review, mandatory continuing education, re-certification, and serial certification programs become hotter, medical education must develop more effective evaluation of the relationships among continuing education, specialty skills, and clinical competence. If continuing education interests correlate with clinical needs in both geographic and specialty areas of medical practice, more agreement may be reached as to what clinical competence is...

In this respect, Miller (161) identified the critical components of clinical competence pertaining to orthopedics through an analysis of over 1,700 critical incidents contributed by practising orthopedists. Since these competencies are relevant to most areas of medicine, and with additional refinement could be used as the basis for defining measurable behavioral objectives in most fields of practice, they are re-stated here:

1. Skill in gathering clinical information:
    a. Eliciting historical information
    b. Obtaining information by physical examination

2. Effectiveness in using special diagnostic methods:
    a. Obtaining and interpreting x-ray films
    b. Obtaining additional information by other means

3. Competence in developing a diagnosis:
    a. Approaching diagnosis objectively
    b. Recognizing conditions

4. Judgement in deciding on appropriate care:
    a. Adapting treatment to individual cases
    b. Determining extent and immediacy of therapeutic needs

5. Judgement and skill in implementing treatment:
    a. Planning the operation
    b. Making necessary preparations for operation
    c. Modifying operative plans according to situation

6. Effectiveness in treating emergency patients:
    a. Handling patients
    b. Performing emergency treatment

7. Competence in providing continuing care:
    a. Attention postoperatively
    b. Monitoring patient's progress

8. Effectiveness of physician-patient relationships:
    a. Showing concern and consideration
    b. Relieving anxiety of patient and family

9. Accepting responsibility for the welfare of the patient:
    a. Recognizing professional capabilities and limitations
    b. Relating effectively to other medical persons

Using this scheme, Miller and his colleagues then undertook a systematic review of both the oral and written parts of certifying examinations for the American Board of Orthopedic Surgeons. This study revealed that tests in both subject matter and professional skills were incomplete and spotty. Accordingly, a new certification program was developed using these defined competencies as the basis for test construction.

The study by McGuire and colleagues (149) illustrates another well known problem of educational testing, namely: that loss of skills almost always occurs unless periodic reinforcement is provided to maintain the skill. Using one control and four experimental groups of 30 to 40 physicians, the study sought to determine gain and retention of auscultatory skills in physicians following a twelve to twenty hour intensive course. Prior to instruction, both the control and experimental groups were pre-tested on the identification of fifteen unknown heart sounds. Immediately following the instructional program, the four experimental groups were re-tested. At this time, a review of hospital charts was undertaken for the control group and one experimental group to assess the information recorded on patients hospitalized with cardio-vascular problems. On the test administered immediately following the course, the experimental groups showed statistically significant gains compared to the control group. At six months, however, the mean scores were not significantly different from the mean score of the pre-test. Moreover, chart reviews of both the controls and experimental groups showed no significant difference in the recording of cardiac findings.

Richardson (201), using a study similar in design to that of the McGuire group, was able to demonstrate some auscultatory skill retention with two groups of physicians (N=16 and 15), and with a third group, (N=15), a mean gain of from 6.4 to 12 six months after training. He attributes these differential findings to the intermittent training schedule used in his study as compared with the intensive one session course provided in the McGuire study.

A number of exploratory studies using the pre and post test design to measure attitude change are reported from the field of psychiatry. Zabarenko (281) concluded that "the results are tantalizingly suggestive but far from coherent." Tucker _et al_ (249) in a longitudinal study of 219 volunteer flight surgeons used scaled questionnaires to measure attitude change following a six month postgraduate course consisting of 48 lectures and eight three-hour interviewing sessions. The questionnaires, administered at the beginning and at the completion of the course, and again eighteen months later, were designed to elicit responses to some 44 frequently heard statements about psychiatry which were scored on a four point scale. The criteria used to score the responses were established by four independent psychiatrists. The most significant findings were that "while the physicians' attitudes toward psychiatrists, psychotherapy and mental illness changed very little over time, they felt more confident and competent in treating psychiatric patients." These findings represent a sampling of opinions and attitudes of a group of student flight surgeons with regards to certain statements about psychiatry, and in no way provide conclusive evidence that any behavioral change occurred which was attributable to course attendance.

Pearson (181) used four specially devised scales to evaluate eight short term psychiatric seminars for general practitioners in eight different communities. Sponsored by WICHE, the programs were all similar in format and used mainly a non-directive approach. The scales used were designed to measure: 1) role tolerance, 2) psychiatric orientation, 3) apostolic function, and 4) social distance. The criteria used to score the scale were the scores achieved by the psychiatrist instructors. The scales were administered as pre- and post-tests to a total of 79 physicians. Although the finding were somewhat varied on the individual scales, statistically significant relationships were found between one or more scales and, on the basis of this, these researchers conclude that the course achieved "attitude change in the desired direction."

On the other hand, Chassy and Heslin (181), using a similar research design, were unable to confirm attitude change in their study of 79 general practitioners who had attended another ten WICHE seminars. Commenting on these studies, Smith (181) states:

> To decide seminar goals is a difficult enough matter but to decide in an objective fashion whether the goals have been achieved is in my judgement, considerably more difficult. Perhaps the most satisfactory means of evaluation is via objective measuring instruments. However laudable the evaluation efforts of my WICHE colleagues have been in this direction, they are the first to admit that their attempts have a strong element of superficiality in them. Can a questionnaire ever be devised to indicate that a physician is more psychologically minded, has more human understanding, and has the therapeutic ability to help his patient toward further understanding of himself? I feel that these are extremely difficult things to measure and to assess.

Forman and his co-workers (100) attempted to test attitude change following short term psychiatric seminars utilizing tape recorded simulated patient interviews. As a pre-test the physicians (six in one test situation and 17 in the other) were required to answer questions related to these interviews. This procedure was repeated at the end of the course and the results of the two tests were compared. The same recordings and questionnaires were also presented to the criterion group consisting of psychiatric resident and staff physicians. Although it was felt that a fair degree of change occurred in the understanding of and interest in psychiatry, the results were inconclusive as measured against the criterion group.

Enelow and Adler (89) have defined goals more clearly, and in spite of a limited sample, they report more conclusive results. In one study (90) designed to measure the effectiveness of a series of ten psychiatric case conferences in producing cognitive learning gain, a before and after design was used that employed instructed responses to three films of simulated interviews. The responses of the psychiatrist instructors provided the criteria against which the fourteen participating physicians were rated. Of the three major hypotheses testing attainment of the stated objectives, two were substantiated at better than an .05 level of significance.

Another study reported by Enelow and Adler (87) concerned attitude change following an advanced supervisory psychotherapy course consisting of 32 four hour session. Four Guttman scales were used to measure the four dimensions of the physician's role in the doctor-patient relationship (authority; self-involvement; expression of concern; and instrumental). These were administered to six physicians before and at the end of the course. A comparison of the two sets of scores revealed that during the course the physicians' conception of the doctor-patient relationship became more consistent in support, moderate in reliance on technical procedures, and high in self-involvement. A follow up interview undertaken several years later revealed that all six physicians had changed their style of interviewing patients, with more emphasis on the patient's behavior and less dependency on psychotropic drugs and psychiatric referrals. Enelow and Myers (91) note that "change in attitude and practice will occur for physicians who take two or three years of psychiatric courses culminating in the advanced supervised psychotherapy course."

Measuring Change in Performance:

Belkin et al (21) attempted to assess the effects of a short training program designed to assist the staff of the Child Health Station in New York City to integrate mental health principles into their daily practice. Using a before and after experimental design, 48 participating physicians were randomly assigned to an experimental and to a control group. The experimental group was observed and scored in detail by two different observers prior to the course and again one month after completing training. The control group, which had not gone through the program, was similarly observed. In order to validate the instrument, observers were not told whether the doctor being observed was in the experimental or control group, and the doctors were not told why the observers were present. The series of observations of performance and questionnaire responses indicated that while the training program was relatively successful in instilling a knowledge of mental health principles and techniques of counselling, a comparison of experimental and control groups suggested that the program was less successful in altering physicians' behavior in practice.

Roney and Roark (212) used patient records as the primary source of data to evaluate the effectiveness of a circuit course. The sample consisted of 1,092 patient records of 41 practising physicians, 24 of whom had attended one or more sessions of the course. The physicians were asked to respond to statementsconcerning 12 health problems that reflected the content of the course being studied. They also selected procedures pertinent to the management of these health problems from their medical records. The use of these procedures as indicated by the patient records was then compared for participants and non-participants both before and after the course. Both groups gave correct responses to the questionnaire and although the findings suggested that physicians attending the course were somewhat more competent in the management of selected health problems indicated by patient records, the difference between the two groups was not statistically significant.

Foster and Lass (102) also used patient records as a source of data to evaluate a videotaped program on the use of diuretics. Two matched hospitals were used, one serving as the experimental and the other as the control group. Observations were made of patient records in both hospitals for three weeks prior to and three weeks following the showing of the videotape in the experimental hospital. The information sought was the extent to which there would be an increase in serum potassium and sodium determinations in the experimental hospital as a result of the videotaped program. The analysis of patient records found no significant differences. The data did reveal that physicians in the experimental hospital were functioning at a significantly higher level than the control group prior to the program. Accordingly, as noted by Abrahamson (1), "One can say that the objectives for using that program were inappropriate...inappropriate certainly for the practice needs of those physicians."

Measuring Long Term Results of Care:

While the ultimate goal of all continuing medical education is the improvement of medical care, efforts to establish cause-effect relationships have proven both difficult and disappointing. One early attempt was a study by Peterson and others (185) of 94 general practitioners. They observed and rated the quality of medical care being practised and then assessed the qualitative rankings against the number of hours of continuing education per physician per year. Some of the superior physicians in this study were found to have taken little continuing education while some of the poorest were frequent participants. This suggests that there was little relationship between the quality of care and participation in continuing medical education.

A more recent study (141) disclosed similar findings. Utilizing an epidemiological approach, this statewide survey attempted to relate physician participation in continuing medical education to 1) reduced maternal and perinatal deaths, and 2) physicians' use of certain surgical procedures. Findings revealed that no such relationship existed. In fact, maternal death rates were highest in two regions with the highest physician participation in obstetrical programs of continuing education and lowest in the regions where physicians took the fewest hours of study. Moreover, in the two regions with the highest tonsillectomy rates, physicians attended no postgraduate course on otolaryngology during the ten year period under study.

In a two year study Korchin (133) sought to determine whether an extensive physician education program would appreciably alter attitudes and improve practice in relation to the medical management and control of rheumatic fever. In this project, 100 physicians in one county served as the experimental group and were offered a variety of educational offerings during the course of one year, while 50 physicians in a second county served as the control group and were offered no extra learning opportunities. Data pertinent to physicians' medical knowledge and practice with regards to rheumatic fever was obtained by the use of before and after interviews in the two counties and the differential responses scored and compared.

Without belaboring the obvious limitations of the research design, two findings of this study are worth reporting: 1) those physicians who were already practising medicine at a high level were more favorably inclined toward the educational programs and to public health measures in general, and 2) in both counties, physicians' medical knowledge regarding the diagnosis and control of rheumatic fever was high, but their use of laboratory methods to confirm diagnosis and their use of prophylactic drugs was inadequate. In short, the application of what the physician already knew seemed indicated. Others reporting similar findings were Tabennaus (244), Peterson et al (185), and Clute (46). Indeed, in Clute's study, a higher percentage of physicians who said it "was not particularly difficult to keep up in medicine, were practising a low calibre of medical care." Commenting on this finding, Lewis and Hussanein (141) ask: "How can physicians judge their need for continuing education, if they are not even aware of their own limitations as practitioners?"

Program Models for Built In Evaluation:

Varying from these approaches have been several recent attempts to help physicians identify their own deficiencies based on patient care research, and then to evaluate the effect of educational efforts designed to help overcome these deficiencies. The first study using this approach was that reported by Williamson and his group (272). The purpose of this pilot project was to:

> 1) Measure physicians' responses to abnormal and unexpected results of three routine admission tests (evaluation); 2) determine whether the physicians needed to improve their responses (objectives); 3) provide the required education (instruction); and 4) re-assess responses to these screening tests and evaluating and repeating the cycle as many times as required to achieve and measure the desired level of proficiency.

Initial assessment was accomplished by means of a chart review and since it revealed that approximately two-thirds of the unexpected abnormal test results went unheeded, a workshop was held to discuss the findings. Although a subjective evaluation of the conference indicated that the physicians found it stimulating and informative, follow up chart reviews disclosed continued neglect of laboratory reports. Accordingly, the educational approach was changed with efforts directed toward altering the physicians' behavior patterns. Removable fluorescent tape was used to obscure abnormal data on the laboratory reports and this resulted in a significant improvement in the physicians' response to test results. This change in behavior was maintained by more than one half of the participants six months after the use of the tape was discontinued.

In the second phase of the project, Williamson's group (271) demonstrated a method for identifying areas requiring priority attention as disclosed by patient care research. The method consisted of three steps: 1) ranking each medical condition encountered at the hospital according to expected patient disabilities; 2) determine which were preventable or treatable in the light of current medical knowledge; and then, 3) assessing the extent to which current medical knowledge was being applied with regards to these conditions. The application of this priority system resulted in the identification of six top ranking health problems which then provided direction for the development of the continuing education program of the medical staff.

Using an elaboration of the Cybernetic model (see Table IV) Brown and his colleagues (32) at Chestnut Hill community hospital have conducted several pilot projects with good results. In one study, ten top ranking diseases were identified and the hospital staff involved in developing criteria of performance in the management of these high priority diseases. Using these criteria in conjunction with chart reviews of patient follow ups, Brown and his group have been able to demonstrate the value of this approach in arriving at precise objectives whereby educational efforts may be measured in behavioral terms. To illustrate, they report an investigation conducted in the use of Antibiotics:

> From studies of those health problems which the system of priority indicated as offering significant potentialities for improving patient care, it became evident that since in one medical department a review of fifty consecutive records of patients revealed only a thirty percent correct usage of antibiotics, a program was required to correct the educational deficit.

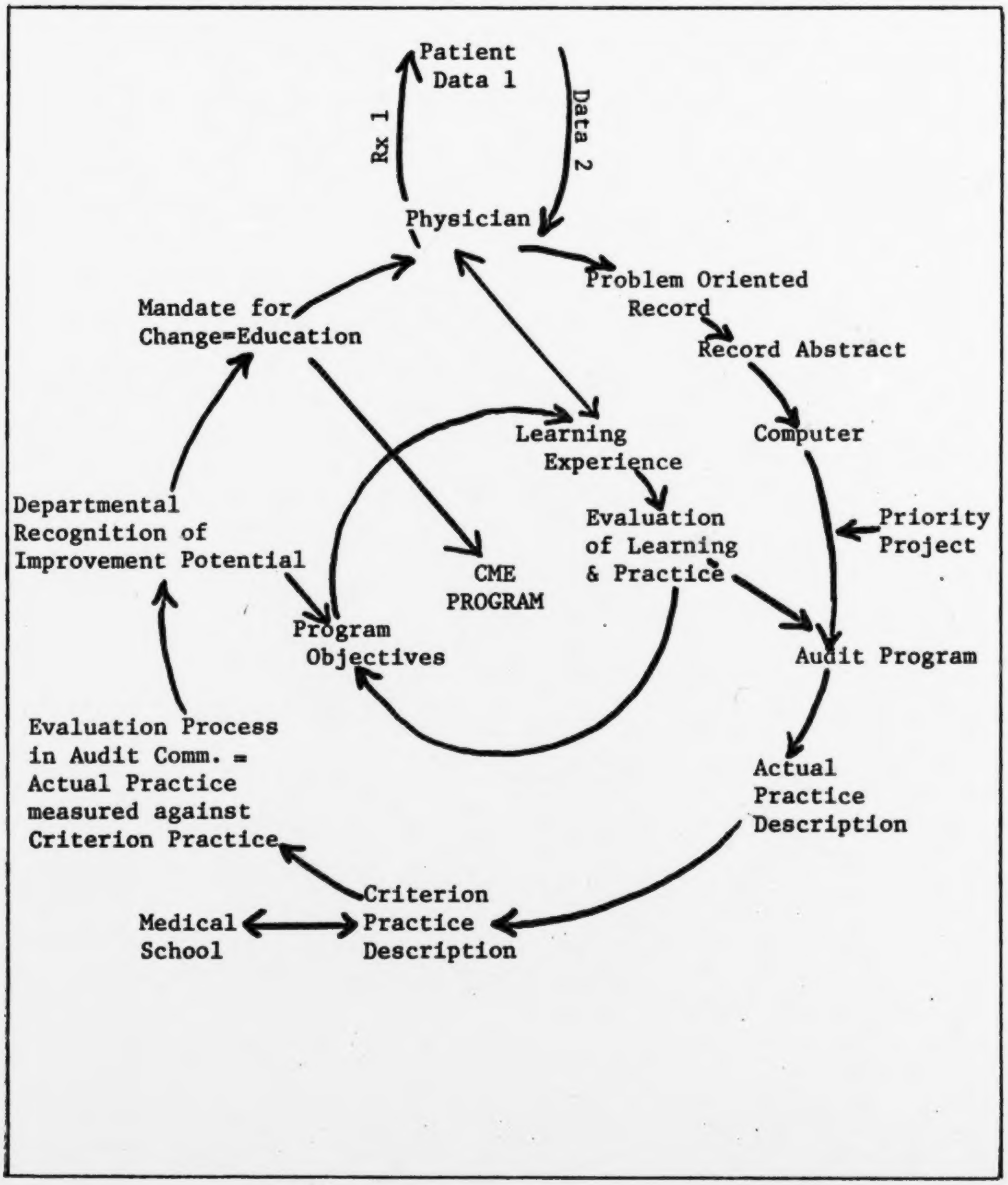
To further determine whether the educational deficit was an informational or problem solving deficiency, an examination based on sixteen of the cases reviewed was taken by 42 members of the department studied. The test results indicated that the physicians had adequate knowledge, so four conferences were held in which the physicians discussed patient management with experts and appropriate literature was introduced as necessary. A follow up study on the performance of physicians, using chart reviews and data from the pharmacy, revealed changes in drug use and management practices consistent with the behavioral change desired.

In a modification of this approach, (237) a group of experts from across the nation developed a criterion of performance for the top ranking health problems. A number of Simulated Patient Problems were then devised based on these priority health problems which enabled a physician to test his own performance so as to identify deficiencies which could serve as the basis for planning and evaluating programs of continuing medical education.

Another program model which attempts to provide individual instruction according to objectively identified deficiencies of practising physicians is the Physicians' Profile Project in operation at the University of Wisconsin. The procedure in this case was to: 1) gather data pertinent to the physician's practice; 2) test the physician in the major areas of his practice; 3) provide educational consultation and study relevant to his practice profile, test the results; and then 4) provide for subsequent re-profiling and testing as a form of program evaluation. In the study reported, a medical secretary visited the offices of 37 volunteer physicians for a one-week period, collecting patient data which was coded to provide each physician with a practice profile. The physicians were then tested through the use of multiple choice examinations based on their profiles. For convenience, tests were administered by way of portable teletype equipment linked to the University of Wisconsin Computer Center. Educational consultants from the medical center then met with each physician to plan a program of study related to the physician's profile and test results. Although this study disclosed that the testing procedures required refinement, and the overall program reduced in costs, the approach was feasible, and the continuation of the project was recommended.

TABLE IV

THE BI-CYCLE: RELATION OF PATIENT-CARE AND EDUCATION CYCLES


Patient
Data 1
Rx 1
Data 2
Physician
Problem Oriented
Record
Record Abstract
Computer
Priority
Project
Audit Program
Actual
Practice
Description
Criterion
Practice
Description
Medical
School
Evaluation Process
in Audit Comm. =
Actual Practice
measured against
Criterion Practice
Departmental
Recognition of
Improvement Potential
Mandate for
Change=Education
Learning
Experience
Evaluation
of Learning
& Practice
CME
PROGRAM
Program
Objectives

SOURCE: Brown, C., and H. Uhl, "Mandatory Continuing Education: Sense or Nonsense?" JAMA; 23:1663 (September, 1970).

PROBLEMS OF EVALUATION

The research reports that have been concerned with the evaluation of programs in continuing medical education suffer from major deficiencies that are slowly gaining recognition. Although virtually everyone concerned with continuing education agrees that evaluation is a good thing, there is no general awareness nor acceptance of the importance of maintaining ordinary scientific controls in conducting evaluations. Too many seem to be content with casual and unsystematic opinionnaires that have neither validity nor reliability in preference to the more difficult and rigorous scientific approach to evaluation that can provide usable data. This reluctance may stem, in part, from the problem of identifying precise instructional objectives and, in part, from the problem of constructing adequate research designs and instruments.

The Problem of Objectives

As noted earlier, there have been numerous surveys attempting to define the general interests and felt learning needs of physicians. More recently, self-assessment tests have become increasingly popular as a way of helping practitioners identify their own learning needs. At the community level, several RMP have conducted consumer surveys in an attempt to identify the health needs of the community (108, 252). While useful, as stated by Miller (160), "These types of efforts in isolation do not necessarily identify the real learning needs." Moreover, equally apparent in most of the studies reported, the the prevalence of vaguely defined objectives which are not readily translated into measurable terms, or which are unrealistic in relation to reasonable expectations of achievement.

Too many programs attempt far too much for the time available, so that the objectives are global rather than specific. Vaguely conceptualized objectives provide no criteria against which to measure results; consequently, in order to evaluate continuing medical education the objectives must be stated explicitly in measurable terms and the programs limited to those objectives.

Design Problems:

An obvious weakness of evaluation studies is the inadequacy of the research designs. Most studies suffer from problems of control such as inadequate sample size, temporal change in educational outcomes, problems of measurement, and experimenter-participant constraints, to name but a few.

Although attention has focussed recently on the successful program evaluations reported by Williamson and Brown, using the medical audit, as warned by Vaneslow (254), "One could argue that each succeeded largely because of the personal charisma of the individual in charge, and that it would be dangerous to assume that equal success could be anticipated in other settings." Moreover, since most care is not given in the hospital but in the physician's office, the use of such a method would need to include an audit of the physician's office practice as well (62). Even more importantly, as pointed out in the recent Conference on Evaluation (49),

> We have been discussing the medical tangibles, pneumonia, the capacity to handle the acute coronary, or whatever you will. What about insights into the emotional areas? No just psychiatry but emotion in relation to illness, in relation to life and death...the kind of things that we do not really see even in the records...These are the things that go on between a physician and his patient, or the patient's relatives. Do we not need something in evaluating procedures here?

It is curious to note that the evaluation studies reviewed rarely made note of the research done in other areas that was relevant to the subject. Most of the design problems evident in the evaluation of continuing medical education have been tested elsewhere--particularly in the general field of adult education. Such research makes it unnecessary for continuing education in medicine to re-invent the wheel.

Costs:

Herzog (116) provides the most recent and detailed estimate of the cost factor in the evaluation of continuing medical education. He has analyzed and compared the cost of several approaches to evaluation showing the relative cost of each (Table V).

According to Herzog, "The guiding principle in judging how much should be spent for evaluation is that marginal costs should approach but not exceed marginal value of the information obtained." Even then he admits great difficulty in assessing effectiveness values versus costs but he does suggest that since "...studies on behavioral change or patient health status greatly exceed course costs, they can be justified only as they relate to the objective of contributing to general knowledge."

TABLE V

ESTIMATED COST OF DIFFERENT EVALUATION TECHNIQUES

FOR A HYPOTHETICAL ONE-WEEK SHORT COURSE

Evaluation Technique	Estimated Cost	Fixed Course Cost	Percent of Course Cost
Participant Opinion Analysis	$ 945	42,000	% 2
Pre-Post Examination of Knowledge	2,455	42,000	6
Mail Survey of Performance Change	47,640	42,000	113
Survey and Observation of Behavior Change	155,850	42,000	371
End-Result Studies of Patient Health	212,350	42,000	506

SOURCE: "Costs of Evaluation"; Proceedings: Evaluation in Continuing Medical Education; Kansas City, Kansas, The University of Kansas Medical Center, August 1970, p.28

CHAPTER VI

SUMMARY AND CONCLUSIONS

Professional education in the field of medicine is divided into three distinct phases: 1) Undergraduate education leading to the M.D. degree; 2) graduate education covering the internship, residency, or other full-time study leading to a license, a professional specialty, or to an academic degree; and 3) continuing education which includes those activities in which practising physicians engage to acquire the new knowledge and skill necessary to keep current in their profession. The first two phases have received the major attention of the profession over the years but continuing education is now becoming a matter of central concern. This concern is not necessarily new, for some of the concepts currently considered new have been recognized and documented in the literature over the past half-century. At first, continuing education in medicine was concerned primarily with correcting deficiencies in basic medical education and in this respect, medicine was following the tradition then current in the larger field of adult education. Since 1930, emphasis has shifted from remedial education to the learning necessary to keep up to date in a rapidly expanding professional body of knowledge.

SUMMARY

This review of the literature published from 1960 to 1970 has been concerned chiefly with the development of programs for continuing medical education. The material reviewed has been discussed under four main headings and is summarized below.

Participation:

Although based on a limited number of available surveys this review of the perceptions of learning needs suggests that there are many reasons, both personal and professional, which determine how much continuing education a physician takes, and where and how he takes it. While there is some indication that specialists and physicians in metropolitan areas attend courses more often, age is the only variable which bears a significant relationship to attendance patterns.

The recurring theme underlying all discussions, is that the physician, and more particularly those in general practice, are busy and their time cannot be wasted. At the same time, a multi-faceted continuing education need exists. While these needs, both general and specific to the practitioner's location and field of practice are identifiable, less evident are those related to the physician's individual practice. Furthermore, there is some indication that a physicians' felt learning needs may not be those most pertinent to his immediate medical practice.

Hence it would seem that those programs which involve practitioners in identifying their "real" educational needs are more likely to succeed than those programs predesigned and presented. Moreover, while physicians most often select the traditional methods and techniques, surveys suggest that familiarity with the different approaches, as well as age, and field of practice, are important variables influencing choice. Thus it is apparent that a wide variety of approaches are indicated, taking into account these variables, and utilizing those methods and techniques to which physicians feel that they can respond.

Organization and Administration:

Most medical schools, professional societies, hospitals, and voluntary agencies, are actively engaged in providing educational programs for practising physicians. The major problem confronting these sponsors is the lack of a sound administrative and academic base capable of adapting programs to the nature and needs of physicians in practice.

The areas of identified needs include: 1) improved methods of determining real learning needs; 2) more clearly defined program objectives, both short and long term; 3) administrative arrangements which would facilitate the planning of interrelated program offerings scheduled to meet the varying needs and preferences of busy practitioners; 4) a more sound fiscal base which would permit more long term continuing education; and 5) the improvement of the quality of instruction provided.

Despite these limitations, there are clearly discernible trends: 1) local and regional conditions more conducive to the establishment of a national plan; 2) greater standardization (minimal standards) of course offerings through the AMA's program of accreditation; 3) a greater concerted effort to motivate physicians to continue their education; and 4) a definite trend toward the decentralization of programs, using the community hospitals as one of the major foci of continuing medical education.

Instructional Processes:

In 1963, Miller (159) wrote,

> This may sound like the repititious beating of an old and very tired horse, but the simple fact seems to be that continuing education today, like continuing education thirty years ago, is obsessed with the notion that exposure to the learned assures learning. Yet each generation rediscovers the fact that in the end it is the learner who must do the learning, and no amount of communication by lectures, by book, by film, by radio, or television, will make the slightest difference unless he does something with what he receives. Both teachers and students have for too long allowed themselves to be deceived by the comfort of instructional methods that require little more than a student's presence, or by the gesture toward active participation embodied in the question period.

In continuing medical education, almost every method, technique, and device known to education is presently in use. Yet, there is little evidence to suggest that any one media or technique contributes to more or better learning. Moreover, close examination suggests that even the most versatile of the newer educational technologies has been used largely in isolation, and mainly to provide physicians access to new medical knowledge.

As it stands at the moment, the field of medicine has made a greater investment than any other in the use of instructional technology. Unfortunately, this experimentation has not been well grounded in adult learning nor has it been studied adequately to determine its precise role in the achievement of learning and the resultant improvement of patient care. Consequently, there is no hard data available to indicate which kinds of instruction under what circumstances and for what kinds of participants best achieve the learning objectives desired.

Evaluation:

Evaluation in continuing medical education has been approached in several ways: by counting attendance; by obtaining participants' reactions; by testing achievement; by measuring changes in medical practice; and by measuring end results of care.

Measurement techniques have been as equally varied. These include: "The use of motion picture film in testing observation; an erasure technique allowing the testing of clinical problem-solving; the application of certain simulation techniques in testing diagnosis; the substitution of non-patient for a real one to facilitate testing of clinical performance" (2); and more recently, the use of the medical audit.

Despite these efforts, this review of studies on evaluation has found a general lack of substantive research and can but repeat the discouraging conclusion of many writers in the field that continuing medical education may not be having a demonstrable effect on medical care.

From experience in the area of general adult education, perhaps Knowles (132) offers the best advice:

> Fundamentally the issue as to how much and what kind of evaluation a given adult educator will engage in will be resolved by referring to his philosophy of education...indeed, his very definition of education. If he defines it as a process of educating a person, of taking responsibility 'for making changes in a human being'...then he does certainly incur an obligation to measure as precisely as possible what he is doing to that person and subject his findings to ethical review. His evaluation will also be greatly concerned with efficiency...with getting data to determine whether or not he is producing maximum change in the shortest possible time at the least cost. His dominant theme will be quantification. But if he defines education as a process of facilitating and providing resources for self-directed inquiry and self-development, he incurs an

> obligation to involve the participants in collecting data that will enable them to assess the effectiveness of the programs in helping them accomplish their objectives. His dominant theme is involvement.

CONCLUSIONS

In considering the expansion of continuing education in medicine, one of the more promising recent developments has been the American Medical Association's accreditation program. Although it is still to early to assess its overall effect on the field, ultimately it should help to establish minimum standards, thereby improving the quality of program offerings. Equally important is the growing trend toward making the community hospital the major foci of continuing education.

Extensive experimentation in the use of the mass media also promises to extend continuing education beyond the confines of the university campus and it has helped to focus attention of their potential for self-instruction.

Despite these and other positive features, many negative trends persist. The majority of programs have been designed to assist physicians in keeping up with advances in medical knowledge, even though the research suggests that the application of new knowledge may be less crucial than the utilization of what is already known about good medical practice. It would seem that more sequentially planned, clinically oriented programs are indicated, and faculty equipped to facilitate learning rather than simply to communicate more information.

At the same time, other types of flexibly organized programs are required in order to help busy physicians meet their individual requirements for learning. There is an obvious need for more studies on the impact of educational programs measured in terms of clearly defined objectives and studies on the overall effect of continuing education on the quality of patient care. Because of the complexity and expense involved, the combined efforts of organized medicine is essential.

Other challenges facing the profession include the continuing experimentation and evaluation of different instructional techniques along with the newer educational media. The many information sources such a journals, consultations, and time on teaching servies, which physicians indicate are widely used as a means of keeping current need to be more carefully studied.

Indeed, it would seem that the term "continuing education" must be expanded to include not only formal courses, but these and the many modalities through which physicians may seek their own continuing learning. As stated by Houle (282) "If the practice of learning in groups can be studied, why cannot individual study?"

The many organizations involved in continuing medical education must share the responsibility for devising a total system, whereby all instruments for learning may be integrated into a comprehensive ongoing program of continuing education for the practising physician.

The need to co-ordinate the pre-professional program with continuing medical education requires serious consideration. There is little evidence that an ongoing curriculum from undergraduate to continuing education has been established. Even more important is the need to inculcate early in the medical student's career, the concept of lifelong learning as a part of his general professional orientation.

The study and practice of medicine is based on the scientific process and, at least in theory, those engaged in the field are trained to solve problems through use of the scientific method. Therefore, it is curious that so little of the scientific method has been applied to the design, management or evaluation of continuing education in medicine. Certain fields of knowledge in the social sciences have accumulated a vast amount of valid data that is immediately relevant to continuing medical education, yet the reports reviewed here showed little evidence that such knowledge is recognized, accepted, and used by the field of medicine. Many of the problems and issues faced in the studies reviewed have occurred in other fields so that continuing medical education can profit from that experience.

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PART THREE

CONTINUING EDUCATION IN NURSING

CHAPTER VII

THE PROFESSION AND CONTINUING EDUCATION

For those familiar with the nursing profession, it would seem superfluous to reiterate the many well known and well documented problems in nursing. Nevertheless, in order to understand both the limitations on and the needs in continuing education, it is necessary to re-examine briefly some of the problems as well as the trends in contemporary nursing.

NURSE COMPOSITION AND DISTRIBUTION

Nurses comprise the largest single group of health professionals, and even ignoring the vast number of practical nurses, orderlies, and other auxiliary nursing personnel, the nurse-patient ratios in Canada and the United States are among the highest in the world, 1:164 (76) and 1:302 (69) respectively. Moreover, for the past several years, employed registered nurses have been increasing at a rate of approximately 3 percent per year in the United States (31) and by 7 to 8 percent per year in Canada (30). These figures are less impressive when one considers that roughly one quarter of the nurses are employed part-time and that the attrition rate is high in nursing (57). Since nursing is largely a women's profession of whom well over one-half are married (76), it is expected that these trends will continue in future.

At the same time, a number of studies (101) (122) (57) disclose that a significant percentage of inactive nurses would be willing to re-enter the work force, provided refresher courses were made available. They also suggest that the majority of inactive nurses are diploma graduates and most are seeking part-time employment. As pointed out in the recent report of the National Commission on Nursing and Nursing Education (69), while re-activation of this group may well satisfy certain manpower needs, it does not necessarily meet the need for nurses with advanced educational preparation, nor does it necessarily guarantee a stable work force.

In 1968, the majority of Canada's registered nurses had no academic degree, 5 percent had a baccalaureate, and less than 1 percent had a higher degree (30). Comparably, in 1966, only 10.6 percent of the registered nurses in the United States had baccalaureates, and 2.5 percent a higher degree (5). On the other hand, the general consensus is that 25 to 33 percent of the present positions in nursing require at least a baccalaureate (76). These data lend support to the conclusion that "the production of a sufficient number of nurses may be less of a problem than the production of enough nurses with higher degrees for those positions where it is felt that such preparation is essential" (57).

Trends in Composition and Distribution:

Of the registered nurses at work the majority are employed by institutions and agencies, particularly by hospitals. Indeed, as shown in Table I, the most significant trend over the past forty years has been the decline of independent practice. In spite of the increasing emphasis on community health care, in 1968 only 8 percent of employed nurses in Canada were engaged in public health or occupational health nursing, as compared to 15 percent in 1930. Recent employment statistics on nurse manpower in the United States suggest a similar distribution in that country (6).

The average annual turnover rate for registered nurses working general

TABLE VI

PERCENTAGE DISTRIBUTION OF EMPLOYED NURSES BY FIELD OF EMPLOYMENT IN CANADA 1930, 1960, 1968.

Field of Nursing	1930	1960	1968
Private Duty	60	9	4
Hospitals/Nursing Schools	25	59	83
Public/Occupational Health	15	7	8
Other or Unspecified: Includes - Physician or Dentist Office: Other specified field		25	5
TOTAL	100	100	100

SOURCES: COUNTDOWN: 1969: Canadian National Statistics: Canadian Nurses' Association, Ottawa, p. 13

Kohn, R., Emerging Patterns of Health Care, Ottawa: Royal Commission on Health Services: Queen's Printer, 1966, p. 24.

duty in hospitals in 60 percent in Canada (75), and 70 percent in the United States (69). Using the oft quoted estimate provided by Taub and Melbin of "$500 to replace one nurse" (108), the economic implications of these turnover rates is obvious. Equally significant, however, is the loss in terms of nurse effectiveness, not only to the new staff nurse but also to all those involved in her orientation. As one in-service co-ordinator writes, "Inservice education is not a luxury or something nice to have in a hospital, it is a necessity. Because of a rapid turnover of personnel our audience is a parade" (113).

Because nursing is a profession composed largely of female workers this may account for the high turnover but according to Murray (75), the turnover rate in nursing is anywhere from 20 to 30 percent higher than for other predominately female occupations. In his study, Murray attempted to identify those variables accounting for the rapid turnover of general staff nurses. He found that with the exception of younger nurses who tended to be more mobile, no clear pattern emerged. On the average, part-time nurses were no more nor less stable than full time staff. Nor did size of hospital or size of community necessarily correlate with job mobility. He did conclude that "nursing turnover is not all a case of being 'pulled'away from a job; at least some of it may be due to being 'pushed' as a result of dissatisfaction with a particular situation." He recommended - as have many others (89) (15) (69) - that "small work groups be created to foster a feeling of autonomy and belonging, and that provision be made for inservice education which would increase professional development and make staff more capable of contributing to the decision making process" (75)

Changing Patterns of Practice:

As new patterns of medical care evolve, the role of the nurse is changing. Nursing in hospital has become increasingly managerial, specialized, and technical, and many patient care procedures formerly carried out by physicians are now performed by nurses (62). Whether or not the nurse should meet these ever increasing demands is debatable and many attempts have been made to clarify the 'unique'functions of the nurse (95) but there still remains considerable confusion on the part of nurses, physicians, and other members of the health team as to what is the role of the nurse (109), (89), (75).

Adding to the problem of role has been that of qualifications. There has been a struggle within the nursing profession over the adequacy of the two, three, or four year pre-professional educational program. While much has been written comparing graduates from the different programs, there is little concrete data to assess differences. A recent analysis of test results by the National Commission on Nursing and Nursing Education (69), disclosed a considerable overlap in the scores achieved by graduates of all three types of programs, and with at least as much variation within each. On this issue, the Commission simply concludes:

> While it can be expected that greater differences will emerge in areas like clinical performance ... it seems likely that differences within the programs will be at least as great as differences between them, and any health care facility that employs nurses must take these variations into account in its orientation and induction procedures.

In the practice setting any consideration of individual differences appears to be the exception rather than the rule. One recent survey of eighty directors of nursing service disclosed that the "standard measuring stick" for all graduates was their ability to 'cope' and function within the traditional hierarchial structure of nursing service which in effect means rating the nurse according to the amount of administration and other task oriented experiences she has had (35).

Harrington and Theis (50) found that under such circumstances, many baccalaureate graduates suffered role deprivation. On the other hand, Price (89) noted that at all levels and regardless of educational preparation, there was "an unintentional commitment on the part of the nurses to the perpetuation of the system". Thus she concludes, "Both preservice education and hospital organization must be changed to improve the situation".

While the present organization of nursing services is an anachronism, the fundamental difficulty in assessing these problems is the lack of research into nursing practice. There is "little objective evidence available upon which to base judgements as to what is the proper scope of practice, what class and types of practitioners are needed, and what kinds and amounts of education each requires" (93).

In recent years university graduate programs in nursing have focussed on the preparation of expert nurse practitioners or clinical specialists who can help define nursing practice in the clinical areas and conduct research into patient care. Although many consider this one of the most promising trends in nursing, it is now being questioned as to whether a "sufficient number of clinical specialists can be produced to make a significant impact on the overall system" (78).

In the meantime, as the need for health services accelerates, physician directed programs designed to produce nurse clinicians in the acute and ambulatory care settings have been increasing, and while both physicians and nurses appear to agree that as health care needs change roles must change, so that the role of the nurse is expanded, there is little agreement about the educational preparation required. A recent study in Ontario (97) disclosed that while nursing educators believed that the expert nurse clinician should be prepared at the graduate university level, the Ontario Medical Association maintained that such a person need be only a diploma graduate, with several years of on-the-job training resulting in clinical competence in one area of nursing. A recent interprofessional survey in the United States disclosed similar findings (98).

Despite these opposing viewpoints, both groups are much more willing to compromise on behalf of optimum patient care, and this reciprocity of roles is evident (65), (8). While professional isolationisms will not soon be resolved, changes in the reciprocal roles of physicians and nurses is a significant trend that has important implications for continuing education in nursing.

CONCERN FOR CONTINUING EDUCATION

The American Nurses' Association (7) includes three types of educational activities under the term continuing education for nurses*:

1. Formal academic study in programs leading to a baccalaureate or higher degree;
2. Short term courses or programs offered by institutions of higher learning but not necessarily directed toward a degree (these are generally referred to as "continuing education courses"), and:
3. Independent or informal study carried on by the practitioner herself utilizing the learning opportunities available to her through her profession or her employing agency.

This review is concerned with the latter two categories of continuing education, but more particularly with those non-credit courses sponsored by institutions of higher learning, and inservice education provided by employing agencies.

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*The term "nurse" as used in this report refers to those registered nurses graduated from hospital schools, junior colleges, and university schools of nursing.

Of the two types of programs, inservice education is the oldest, and probably still the most prevalent form of continuing education in nursing. Pfefferkorn's historical review (88) published in 1928 provides evidence that as early as 1905 postgraduate nursing courses were being offered in a variety of medical specialties. She reports that these programs were not well developed and that many were being given merely to increase the work force of the hospital. She further notes that educational opportunities for the general staff nurse were almost non-existent.

Straub (107) reviewed the nursing literature between 1928 and 1960 but found few articles related to the inservice education of nurses. She noted an increase in the number of publications from 1950 to 1960 and that the main emphasis of most of these related to techniques of program development or program descriptions, and that the research was limited to descriptive surveys or opinions of participants about the programs.

This present review covers the decade of the sixties and found that the calibre of the published literature has changed very little. There are many articles of the type, "How we plan our program" (99), (34), (61), (123), and program descriptions concluding "We felt that the training program was very successful" (117), (71), (84), (104), (58), but there is little objective data to justify these convictions. Indeed, recurring themes are problems such as the rapid turnover of staff, the differing levels and preparedness of nurses, the demands of a busy nursing service, and reluctance of nurses to attend programs (89), (111), (36).

Continuing education as a component of higher education is very recent in nursing. It was generally accepted in the past that the major commitment of the university school of nursing must be to the undergraduate and graduate programs (54). Accordingly, although continuing education courses are reported to be increasing in number (48), the more sequential, long range programs are the products of a relatively few universities. In the United States, RMPS (regional medical programs funded under the terms of Public Law 89-239), and the Western Commission on Higher Education in Nursing (WCHEN) have also been active in the development of continuing nursing education.

In 1968 Mrs Signe Cooper at the University of Wisconsin held the first national meeting on continuing education in nursing. The primary purpose of this meeting was to provide a forum for the exchange of ideas and developments relative to the field (92). In 1969, concurrent with the Fourteenth Congress of the International Council of Nurses held in Montreal, Mrs Margaret Neylan from the University of British Columbia called a similar meeting (91).

Subsequently, two national conferences have been held specifically for those nurse educators working in the field. The first of these held in Williamsburg, Virginia in 1969, focussed on the leadership role of institutions of higher learning in continuing nursing education (90). The second, held at Syracuse University, New York in 1970, took as its theme the organization of continuing education for the implementation of change (51).

The third national conference held in Wisconsin in October 1971 had as its major theme critical issues in continuing education in nursing. An issue of the Journal of Continuing Education in Nursing (51) was devoted to papers developed around the issues discussed at the conference. In brief, the major concerns as expressed in these papers are as follows:

> Will short term courses presently preparing pediatric nurse practitioners prevent a rapid and necessary increase of the nursing specialist prepared at the graduate level? Present graduate programs are not preparing sufficient numbers of expert nurse practitioners. Can we afford to ignore the need?

> Continuing education is fragmented, disorganized, unrelated and haphazard. Can these activities be co-ordinated in a reasonable rational approach? The great proliferation of opportunities in part reflects an expressed educational need by nurses, but could more be accomplished through better co-ordination?
>
> What are the unmet needs and educational gaps? And whose responsibility is it to meet these needs .... or even to identify the needs?
>
> Who pays for continuing education in nursing? Granted that the learner has some personal responsibility, what about the employing agency?
>
> Does continuing education make a difference? When we can identify more specifically how improved nursing care results from our various educational activities, perhaps we can expect more support, financial and otherwise.

Research Interests

In her report of a national survey of all colleges and University schools of nursing in the United States in 1969, Gwaltney (90) identified the following research underway in the areas of continuing education for nurses:

University of Wisconsin:

1. A Study of The Continuing Learner in Nursing: September 1, 1962 - 1963.
2. A Survey of Inactive Nurses Enrolled in Refresher Courses: September 1967, 1968. (In progress)*
3. Evaluation of the Effectiveness of the Nursing Dial Access Program. (In progress)*

University of North Carolina:

A Study to Determine Whether the Preparation of a Nurse for Coronary Care Has an Effect on the Condition of Patients at Discharge From Coronary Care Unites in the State. In collaboration with the School of Public Health. Dept of Epidemeology and the Regional Medical Program.

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* Completed and available

Syracuse University

Following the programs, Improved Management Skills: An Approach to Better Patient Care: The Dept of Psychology did the evaluation of the program.

St Louis University

Limited local survey of education needs (1965 and 1968). Committee on Continuing Education Study on Evaluation form data, 1968.

Through library research as well as correspondence with over thirty universities in both Canada and the United States, the following additional studies illustrate the nature of current research underway:

A Survey of Inactive Nurses in Washington State. A study to determine the characteristics of inactive nurses, their reasons for not working in nursing, the extent to which they represent a potential nurse supply, and their interest in a refresher course. Sponsored by the Washington State Department of Health; Division of Nursing; University of Washington, School of Nursing; Washington/Alaska Regional Medical Program, 1968.

A Survey of Continuing Education Needs for Health Professionals: Idaho; Montana; Nevada; Wyoming; Sponsored by WICHE/Mountain States Regional Medical Program, 1969.

Nursing in Idaho: A Study of Nursing Needs and Resources; Sponsored by the Idaho Office; Mountain States Regional Medical Program; WICHE in co-operation with the Idaho State Nurses' Association, 1969.

An Evaluation of a Continuing Education Program; WICHE in co-operation with the Idaho State Nurses' Association, 1969.

An Evaluation of a Continuing Education Program in Nursing; University of Colorado, Boulder, Colorado; 1960.

Evaluation of Regional Continuation Education Conferences.

The Effectiveness of a Leadership Program in Nursing; Supported by Public Health Service Grant from the Division of Nursing; Bureau of Health Manpower and Institute of General Medical Sciences, United States Public Health Service, 1967.

Continuing Education for Nurses: A Study of the Need for Continuing Education for Registered Nurses in Ontario; Sponsored by the School of Nursing of the University of Toronto in co-operation with the Division of University Extension, 1969. (25).

A Report of a Questionnaire for Teachers of Nursing in Ontario; A Study of Continuing Education Needs: Registered Nurses' Association of Ontario, 1965.

Continuing Professional Education Needs of Supervisory Personnel in Nursing Service and Nursing Education: Pennsylvania State University, 1965.

Correspondence Instruction as an Educational Method in Hospitals; Pennsylvania State University and the Hospital Research and Educational Trust of the American Hospital Association, 1967 (37).

Management Training Effectiveness: A Study of Nurse Managers; Sponsored by the Texas League of Nursing; 1965.

What Do Practising Nurses Want to Know? A Study of Learning Needs.

As is evident, well over one half of the studies reported are descriptive of nurse manpower resources and the nurses' perceptions of their learning needs. Moreover, most of the reported research on program evaluations are, at best, exploratory.

In 1971, the American Nurses' Association was awarded a one year federal grant to conduct a national survey of continuing education for nurses. The purpose of this project will be to "identify all types of existing continuing education programs and resources" (66). It is hoped that the findings of this study will provide information which will help to determine the future direction for continuing education in nursing.

CHAPTER VIII

PARTICIPATION IN CONTINUING EDUCATION

Although there is no data available to indicate the extent of nurse participation in continuing education, using membership in the American Nurses' Association as a criteria, Curtiss _et al_ (51) provide a national estimate of less than 30 percent. They stress that the "number of nurses aware of their needs for further study are to be found in encouraging numbers."

CHARACTERISTICS OF PARTICIPANTS

Through an analysis of descriptive data obtained from 314 nurses who attended the University of Wisconsin's Extension courses between September 1, 1962, and August 31, 1963, Cooper and Hornback (28) attempted to identify those personal-professional characteristics of nurses who were more likely to continue their professional education. The results of this study are summarized in this section, using other comparable data where appropriate.

Location of Practice:

Nurses attending the University of Wisconsin extension courses during the period under study were almost exclusively from that state. Those counties not represented in the population tended to be more rural and employed fewer nurses. A recent annual report from the University of British Columbia (100) disclosed similar findings in which 90 percent of the course registrants were from the province, and 65 percent from the Greater Vancouver area.

In a WICHE study (96), the great majority of nurse respondents indicated that "because of family responsibilities, they would not attend short courses offered outside their local communities, even if expenses were paid."

Position in Nursing Service:

The majority of nurses participating in continuing education programs were full-time employees of hospitals. Supervisory personnel made up the largest single group of participants, with some 40 to 50 percent of the participants in this group. Staff nurses were next in frequency at something like 40 percent, with a miscellaneous category accounting for less than 15 percent of the participants. This distribution by position was found in both the Wisconsin study, the UBC Report, and most other similar studies (28) (43) (89) (100) (102). The generalization to be drawn from these data is that nurses in higher positions attend more continuing education programs.

In commenting on this generalization, Cooper and Hornback (28) ask:

> Are the learning needs of supervisory personnel greater than those of nurses on the staff level? Does this suggest that basic nursing programs do not prepare nurses adequately for these responsibilities? Or does this finding suggest that it is easier for supervisory nursing personnel to get away from their job to go to meetings?

Marital Status and Age:

In both the Wisconsin and UBC reports, about one half of the participants were married or divorced. In the Wisconsin study, 45 percent of the participants had children, and one fourth of these had children under five years of age. In contrast, the UBC data found that over one half of the participants had no children.

The Wisconsin study found that the largest percentage of participants were those in the older age group (50 to 54 years). Similarly, the WICHE study found that nurses with ten to twenty years or more of active practice expressed the greatest need for continuing education. In contrast, the UBC data reveals a distribution that is somewhat equal in all age groups but with a marked decrease in those over 55 years of age.

Educational Achievement:

The Wisconsin study reported that 22 percent of the participants had a college degree in contrast to 15 percent of the nurse population of Wisconsin that had degrees. In the UBC report, 18 percent of the participants had the baccalaureate degree, 3 percent had a Master's degree; and 20 percent a diploma or certificate. These data are consistent with participation studies in adult education which lead to the generalization that participation in continuing education tends to increase with formal education.

Albeit based on a limited sample (N=79), in Shore's study (102) nurses with more education reported less participation in programs of continuing education. She attributed this finding in part to the higher proportion of young graduates in the sample, who "perhaps felt less of a need for continuing education".

Fleck (44) found that variables such as age, educational background, years of experience, and marital status, did not correlate with opinions relative to inservice education. She does note, however, that "in some instances, the years of professional experience did produce a greater recognition of the need for continuing growth."

Use of Other Information Sources:

In the Wisconsin study, over one half of the respondents indicated that they held membership in the American Nurses' Association which contrasted with the 32 percent of the nursing population in the state that reported such membership. Over one half of the respondents indicated that they read two or more professional journals.

Flaherty (43) found that over one third of the nurses in Ontario felt that their educational needs were not being met yet two-thirds were eligible for inservice education. Flaherty observed that part-time and private duty nurses fared badly in this respect. She also found that nursing library facilities were poor and available to less than one half of the respondents. She also notes that "what was available, was used infrequently by the nurses". Burt's study (16) of 15 hospital staff education programs in Washington state disclosed that only 13 percent of the respondents had done some reading or other preparatory work in conjunction with the inservice program attended (16).

Professional journals and books ranked first in terms of both availability and use, while conventions and meetings ranked second in the WICHE study (96). On the other hand, short term courses were least available but the nurses felt that these were needed urgently. A sample of nurses in each of four mountain states were asked to indicate whether they had received additional formal education or on-the-job training for work in the clinical area in which they were then employed. In all four regions, over 70 percent of the graduate nurses had received inservice education or on-the-job training. Of the three levels of nursing education, 45 percent of the diploma graduates reported that they had received additional formal education in the clinical area compared to 30 percent of baccalaureate graduates and 9 percent of associate degree graduates. The courses most likely to gain support are those which are either based on what the nurse believes to be her own learning needs or those which she found most helpful in increasing her job proficiency (102), (16), (89).

REASONS FOR PARTICIPATION OR NOT

In the Wisconsin study (28) participants were found to attend courses for a variety of reasons, but none of the respondents attended because it was "demanded" by the employer or for reasons of promotion. The main reasons given for participation were interest, desire to improve teaching or nursing care, and advised to do so by employer.

Family responsibilities was listed as the most important single factor preventing nurses from attending programs of continuing education (37), (28), (43), (122), (96). Other important but related deterrents included time, expense, staff coverage (10), (96), (37), (25), nothing available, and/or distance (96), (28), (43), (57), insufficient advanced notice of course offerings, and/or inadequate publicity regarding the course (25), (28). In the Ontario Survey of Needs (25) employers stated that it was difficult to plan continuing education programs for staff development when little advance notice of course offerings was given. Nurses were reported reluctant to take advantage of opportunities available when costs for attending courses on short notice prohibited its inclusion in the hospital or agency budget.

In her study, Burt (16) found that of the fifteen hospitals polled, four made attendance compulsory at inservice education programs, and one hospital specified that "attendance was required for some, but not all nurses." In the remaining ten hospitals attendance was voluntary. Payson and Salloway (84) found that one of the major reasons staff members did not like the inservice programs was because they were compulsory. On the other hand, some respondents indicated that once they got there they found the programs enjoyable. Fleck (44) concluded that the major obstacles to participation in inservice education programs were: 1) the rotation of hours and the heavy workload which limited attendance; 2) unplanned, dull, poorly presented programs; 3) the general indifference of the majority of staff nurses to inservice education. These findings are not too different from those reported in the Pennsylvania study (10).

Scheduling:

Most surveys disclose that nurses want continuing education presented in their local communities (69), (57), (36), (122). In the two WICHE:MSRMP surveys over 85 percent of the respondents indicated that they would attend short courses if these were offered in their home communities. The frequency with which they would be willing to attend such courses is shown in Table II.

A survey of inactive nurses in Wisconsin (96) disclosed that of the respondents who were interested in returning to nursing, 73.12 percent desired refresher courses scheduled as part time classes with roughly one half preferring a day time schedule, and the other half an evening schedule; 67.65 percent of the inactive nurses expressed a willingness to travel but one half would not commute over ten miles in order to attend refresher courses. A survey (97) of teachers of nursing in Ontario found that the majority of teachers would like courses scheduled in the evenings and the months most favoured were February and March.

Cost:

In Flaherty's study in Ontario (43), 40 percent of the respondents reported that employers granted them time off or pay to attend programs,

TABLE VII

THE FREQUENCY WITH WHICH R.N.'S WOULD BE WILLING TO ATTEND SHORT TERM REGIONAL PROGRAMS

Frequency	Regional Response		Idaho Response	
	Number	Percent	Number	Percent
Once a Month	219	54.88	54	52.42
Every Six Months	102	25.56	30	29.12
Once a Year	47	11.77	11	10.67
Other	31	7.76	8	7.76
TOTAL:	399	100.00	103	100.00

SOURCE: WICHE:MSRMP: Idaho: A Program for Continuation Nursing Education; An Unpublished Report.

meetings and conferences. The most favoured groups in this regard were those in administration, teaching, and public health nursing. In the Wisconsin study (28), three quarters of the respondents had their fees paid by the employing agency. In most cases, this was the entire fee or through time reimbursement in the form of "giving on duty time". Asked if they would be willing to pay their own fees, nearly 62 percent responded in the affirmative while approximately 12 percent responded negatively and one quarter did not respond to the question. Referring to the non-respondent category, Cooper and Hornback ask: "Does it imply indecision or can it be assumed that the majority of these nurses would not have attended the institute had they been expected to pay their own fees?" (28).

Although it is impossible to draw firm conclusions on the basis of the limited data available, a number of reports suggest that many nurses expect some type of reward for continuing their own education. As previously noted, in the Ontario Survey (25), employers reported that nurses were often reluctant to finance their own attendance at courses. In the WICHE:MSRMP surveys (96), only 24.2 percent and 27.4 percent of the registered nurses indicated that they would attend programs outside their own communities at their own expense, whereas 55.8 percent and 63.3 percent would attend if their expenses were paid. Similarly, Goldfarb (46) notes that "most of the nurses who take the course expect compensation upon successful completion", however, "they were not sure where the compensation was to come from or what it should be" (46).

Felt Learning Needs:

Surveys which have used open ended techniques to identify the felt learning needs of nurses reveal some striking similarities in responses. Regardless of position or type of agency, one of the most prominent needs listed is that of improving communication and management -leadership skills (36), (10), (43), (37), (25). Other learning needs rated high in the list of priorities include: newer dimensions in nursing care; legal aspects of nursing; and the changing role of the nurse. In the Pennsylvania study (36), many nurses were being promoted into administrative, supervisory, and team leading positions with little preparation for their new responsibilities, and hence were insecure as managers. Accordingly, directors of nursing were in full agreement that there was an urgent need for courses to improve the supervisory skills.

In the Ontario Survey of Needs (25), employers both of public health and of hospital nurses expressed a similar view. Directors of nursing also indicated that they looked to continuing education courses to fill the gap created by the phasing out of the one year certificate programs on nursing service administration. Other pressing needs revealed in this survey were: 1) courses to increase the teaching skills of nurses in different fields and levels of nursing, including public health nurses, inservice co-ordinators and occupational health nurses; and 2) specialization in nursing, notably in the area of intensive care nursing, chronic disease, mental health, and rehabilitation.

Utilizing a modified survey or "slip technique," Skinner and her colleagues in the Michigan RMP (103) gathered opinions about the current learning needs of staff nurses, team leaders, and head nurses in the care of patients with heart disease, cancer, stroke, and related diseases. Forty-eight nurses representing each level identified not only the broad learning needs referred to in the foregoing surveys, but also specific learning needs directly related to patient care, including 1) how to position acutely ill patients to prevent deformities and other complications; 2) how to read EKG's and recognize death producing arrhythmias; 3) how to be more effective in teaching patients and families; 4) how to care for terminally ill patients; 5) how to care for patients receiving chemotherapy and irradiation.

Using a scaled questionnaire and interviews, Tiffney (109) sought to determine the competencies of general staff nurses functioning in the field of rehabilitation. She concluded that general duty nurses lacked the necessary competencies for effective work in rehabilitation. Although the nurses interviewed emphasized that their role was not understood or appreciated by the other disciplines on the rehabilitation team, Tiffney adds, "this no doubt was aggravated by an apparent lack of understanding on the part of the nurses themselves as to what the functions of the nursing staff include". Among many recommendations, she urged that short term courses in rehabilitation be set up, organized, and implemented by qualified personnel as a crash program to alleviate the shortage of graduate duty nurses who require this preparation to function as skilled practitioners.

In the study of teachers' learning needs (97) over 80 percent of the respondents requested content related to the biological and social sciences. The teachers expressed the greatest need for subject matter specifically related to their own field of practice. As a result of this survey, six 3-week institutes for teachers of nursing were conducted. Although a relatively unstructured program was planned, it soon became evident that the real learning need of the instructors was not course content, but rather how to apply it in situation-type problems in clinical practice (94).

Price (89) attempted to identify learning needs in two ways: The first was a self report of a critical incident encountered the previous year which the nurse considered of extreme significance and related to her lack of preparation. The second was an identification of the learning need which the nurse thought would enable her to best improve the quality of care she provided to patients. Using this approach, Price found that while the nurses reported their greatest learning needs to be indirect patient care, most of the critical incidents related to direct patient care. More specifically, the greatest needs and/or problems related to "insecurity regarding nursing care, new techniques, methods relating theory to practice". Concerning many of the critical incidents reported, she states:

> This indicates a failure of transfer of learning from past experiences. If this does not take place, pre-service education must be considered inadequate. The pre-service education of the individual nurse should enable her to analyze her own abilities and recognize her needs for additional learning (89).

Price indicated that learning needs reported most frequently in the area of indirect patient care were those related to leadership and management. In this area, skill in handling people was given primary emphasis. It was also indicated that clarification was needed with regard to current programs in nursing education and regarding interpretation and implementation of hospital policies. On the basis of her findings, Price concluded that there was no advantage in trying to group nurses for inservice education according to the amount of professional training received, whether their preservice clinical experience was in the hospital in which they were employed, or on the basis of the number of years away from hospital nursing. She concluded that the homogeneity of learning needs was probably most related to functional role, type of care given, years in nursing, and length of employment.

Methods and Techniques:

A recent survey (10) revealed that the instructional techniques most preferred were: lecture, group discussions, films, handouts, panel, and role playing, in that order. Fifty-eight respondents expressed opinions. One of the most frequent requests relative to improving instruction was more learner participation. Similarly, Burt (16) found that many of the nurse respondents would have liked more opportunities to volunteer comments and engage in discussion with colleagues.

On the other hand, nursing teachers administered a post-institute questionnaire which indicated that the "least helpful aspect of the programs were the small group discussions". The reason given was that "the group wandered from the topic". At the same time, observations by resource persons during the institutes indicated that the development of group discussion and conference skills were a very prominent need among teachers of nursing attending the institute.

The references found relative to the preferences and opinions of nurses about the newer mass media and self instructional methods suggest that nurses are willing to utilize these where available (2), (14). In the WICHE study (96), nurses, particularly younger nurses, expressed an urgent need for programmed instruction, television, radio and educational films, more or less in that order.

A recent survey (10) by the school of nursing at Pennsylvania State University disclosed that 60 percent of the responding hospitals would be willing to experiment with television, while 21.42 percent would not and 18.57 percent were undecided. The major problems relative to its use were: cost, lack of facilities or equipment, and the quality of the program, in that order.

CHAPTER IX

PROGRAM, ORGANIZATION AND ADMINISTRATION

A number of different groups sponsor programs of continuing nursing education including the universities and their schools of nursing, employing institutions - notably hospitals and public health agencies - nursing and hospital associations, and voluntary or specialty health groups. Of these, the universities, hospitals, and nursing associations are the primary sponsors of formal programs.

SPONSORS AND PROGRAMS

Since there is no nationally systematized method for reporting the numbers and types of current course offerings, the information provided in this section represents data gleaned from a variety of sources which reflects present patterns and trends.

Nursing Associations

In a recent article, Spector (105) wrote:

> Continuing education in the American Nurses' Association is like an iceberg. That is, its clinical conferences and publications are clearly visible. What is less evident are the following: the efforts expended by the national association to encourage the development of continuing education programs and make it possible for the profession to determine the standard of its education and practice.

More specifically, the role of the national nursing associations relative to continuing nursing education has been: 1) to procure federal funds for both graduate and continuing education; 2) to encourage the development of effective orientation and inservice education programs in the employing agencies; 3) to promote the return to nursing of inactive nurses; and 4) to provide information to nurses regarding various alternatives for professional advancement through formal education (95), (7), (105), (86).

In addition to the foregoing, the Canadian Nurses' Association (CNA) provides a Library Loan Service on nursing publications, while the two major associations in the United States offer for rent or purchase various teaching aides and resources. More recently, the National League for Nursing (NLN) is reported developing programmed instruction on various aspects of clinical nursing (118).

In 1967, the American Nurses Association (ANA) received a $50,000 federal grant to promote a nation-wide program of refresher courses to encourage a target of 30,000 inactive nurses to return to nursing within one year. The Association's primary role in this venture was to identify inactive nurses and to involve agencies, particularly state nursing associations, in the provision of the courses. As part of its responsibility, the ANA designed a set of guidelines and a model course which was subsequently published (32). Since this original drive, further grants have been made to expand the ANA's promotional efforts (13).

For the past decade the ANA has been sponsoring three day regional conferences focussed on clinical practice. Although attendance reported at these conferences is estimated at some 950 per conference, one of the principal concerns of the association is whether or not the conference is actually reaching the desired target group, the clinical practitioners. A study in 1967 revealed that the majority of participants were teachers and administrators (105).

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The major contribution of the CNA is an extension course on Nursing Unit Administration which it has co-sponsored for a number of years with the Canadian Hospital Association. Designed to combine correspondence study with a workshop, this is offered nationwide to nurses employed in supervisory positions. Generally considered a highly successful program, Goldfarb (46) reported that in the first four years of its existence over 1,500 head nurses, supervisors, and directors of nursing had completed the course.

All three national associations in co-operation with various specialty and local groups offer conferences and workshops relative to continuing education for nurses (25), (118), (105). A major concern of the national nursing association at present is the establishment of guidelines and policies governing the expanding role of the nurse (20), (9). As the health professions move towards "relicensure" the development of standards for continuing education and a greater effort to increase the number of available learning opportunities for practising nurses (105) will require national attention.

This search of the literature yielded little on the activities in continuing education of state, provincial, and local nursing associations. Recent annual reports from university schools of nursing suggest that nursing associations are working more closely with the university schools of nursing both in planning and implementing programs of continuing education at the local level. Their influence is also expressed in other ways, notably through the provision of funds for program development, studies of learning needs, and their role relative to nursing standards and practices (100), (115), (25).

Hospitals

Although there are no detailed studies on inservice education, the evidence available suggests that its development has been quite limited. One survey of inservice education in nine hospitals reported as part of a national study on the quality of nursing service in Canada (95) revealed that in all nine hospitals studied, orientation to the ward situation was the responsibility of the head nurse and her staff. In a few instances this program was planned to last several days or weeks with conferences, classes, and demonstrations in the afternoons. Three hospitals had a designated inservice educator and tended to offer the more comprehensive programs with more consistent follow-up for each new employee. One major weakness of most orientation programs was the lack of planned orientation to evening and night shifts. On several occasions nurses stated that they had been placed in charge of a ward on evening or nights without sufficient introduction to the administrative functions and procedures, as well as to the patients and their needs. In two instances nurses said they had to depend on nursing assistants and students to inform them of the policies, routines, and responsibilities of various personnel.

In all but one of the hospitals surveyed, planned inservice education programs were provided. However, most of the programs focussed on disease entities, technical procedures, and new equipment, "even though observations and discussions suggested a need for inservice education oriented around the kinds of patients which nursing personnel indicated provided difficult nursing problems." Current literature was almost non-existent on most nursing units; however, one hospital reported circulating select periodicals. Most of the hospitals indicated that nurses were allowed and in fact, encouraged to attend various short courses, workshops, or institutes, conducted by nearby universities.

The two major administrative problems emphasized by the nurses were: 1) the difficulty of releasing personnel to attend the programs; and 2) the difficulty of planning programs for evening and night staff. As stated by one respondent, "I think the afternoon and night staff should have some form of inservice program, but you can't expect the night nurse to get up for an afternoon meeting".

Many of the critical incidents provided over 1,000 registered nurses in Price's study (89) suggest that comparable problems exist in many American hospitals. This study emphasized that all personnel, whether full or part time, day, evening, or nights, should participate in inservice education and it recommended that scheduling be improved by the provision of an 'education day' for each nurse. "When inservice education is considered as essential, improvement in scheduling can and will be made. This is recognized to be a task that is difficult, but not impossible". The report also recommended that inservice personnel work with nursing service to ensure that nurses not be assigned to a leadership role without previous orientation.

In the Idaho Study (57), hospital based inservice education programs were found to be minimal, and much of what was being offered consisted of didactic presentations. Only six full time educational directors were employed in the fifty three hospitals and fifty four long term care facilities in that state. None of the directors had advanced education nor any additional training in the educational process. In fact, this study concluded that the educator's needs for continuing education were similar to those of the nursing staff. These findings are not too different to those reported by Tiffney (109), Murray (75), and others (36), (92).

The National Commission on Nursing and Nursing Education (69) summarized its conclusion as follows:

> The entire committment to inservice education has been characterized by inadequate support and insufficient personnel. Of the more than 7,000 hospitals in the United States, for example, no more than 300 have a professional training specialist to direct their inservice programs. All too frequently responsibility has devolved upon nursing service in the absence of any specific plan.

Despite the disorganized state of the field, it is expected that a number of recent developments will greatly influence the future of inservice education. One of these is the recent statement by the Joint Commission on Accreditation which would require that nursing departments provide continuing education for nursing personnel (82). Although limiting in one sense, this requirement would provide greater support for inservice education. Another development concerns the educational media which promise a partial solution to some aspects of the multi-faceted problem (17). Even more important is the increasing trend towards the regionalization of continuing education, which in turn is facilitating cooperative planning andindeed, in some areas of programming, it is becoming increasingly difficult to distinguish between "inservice" and "continuing" education.

Universities and Their Schools of Nursing:

Gwaltney surveyed (49) all colleges and university schools of nursing in the United States. This study revealed that during the academic year 1968-69, 41 of the responding schools offered 400 programs with a range of from 1 to 69. In addition, all 41 respondents indicated some degree of participation in co-sponsoring courses, notably with voluntary health agencies, state nursing associations, RMPS, and other colleges and universities. The length of the programs offered varied from one half to forty days.

The Ohliger and Barratt survey (81) of 96 NLN accredited schools of nursing offering a baccalaureate but no higher degree suggests even less involvement of collegiate schools in continuing education. Of the 62 schools responding, only 31 had offered a continuing education program during the academic year 1967-68. More specifically, 15 schools offered one continuing education program, 12 offered 2 to 5, and only 4 offered more than 5. These programs varied in length from one day to two weeks while in some cases a program was offered intermittently over a semester.

The University of Toronto Survey (25) revealed that between 1965 and 1968, four of the province's universities provided 19 courses for nurses. Of these, only 12 were sponsored or co-sponsored by schools of nursing. The others were offered by the faculty of medicine and the school of hygiene. The length of the nursing school programs ranged from two days to eight weeks. In the two national surveys, groups for whom programs were most often provided were general staff nurses, head nurses, supervisors, instructors, public health nurses, occupational health nurses, and private duty nurses, more or less in that order.

In Gwaltney's survey, the schools indicated that the most frequent request was for management skills and to a lesser extent clinical nursing. Ohliger and Barratt reported the following content areas: nursing in public health, rehabilitation, maternal-child, medical-surgical, and mental health. More specifically, topics included: sex education and family life, principles of management and supervision, sensitivity training, head nurse roles, legal problems in nursing, teaching methods, problem-solving and nursing practice, and mental retardation.

A review of recent program descriptions suggests that in addition to the foregoing, university schools of nursing are also offering an appreciable number of refresher courses for inactive nurses (22), (21), (114). The literature also suggests that more consideration is being given to sequentially planned clinically oriented courses, particularly to the areas of intensive care (17) and leadership development (38), (39), (40). In addition, a few universities are reported offering certificate courses designed to expand the role of the nurse in the area of ambulatory care (114), (85).

On the whole, comprehensive programs with long range goals appear to be the exception rather than the rule. As in all the health professions, the great majority of programs in continuing nursing education are short courses, designed to meet the immediate needs of nurse practitioners and/or the employing agencies (18), (116), (48).

ADMINISTRATION

Although administrative arrangements vary, the majority of continuing education programs are administered as part of the universities' schools of nursing. A few, however, exist as separate divisions but within the health science complex (49). At the University of Wisconsin, continuing nursing education is organized as a separate department within the extension division. To ensure co-ordination with the school of nursing, the administrators in extension are also on the faculty of the school. In keeping with the extension concept, courses in nursing are offered throughout the state using a variety of administrative arrangements (26). The University of Colorado's continuing education service has a state advisory committee made up of representatives from various fields of nursing and allied health professions. The role of this committee is to serve as a means of communication relative to continuing education needs, and as a liaison between the school of nursing and health agencies (115).

Gweltney (49) disclosed that the majority of reporting schools employed full time directors of continuing education for nurses. Of these, 27 directors held master's degrees, 4 held doctoral degrees, and one had a baccalaureate. Additional nurse faculty engaged full time ranged from 3 to 23. Most of these held master's degrees. Ohliger and Barratt (81) reported that 7 of the 31 responding schools reported that persons responsible for the program had some additional preparation in adult education.

Instructors

The nursing schools reported the use of both regular faculty and outside people to teach continuing education programs. These latter included: public health personnel, nurse clinicians, physicians, physical therapists, sociologists, psychologists, social workers, pharmacists, attorneys, and television programmers (81). Most schools also report the use of local nurses as resource persons and/or teachers (92). Some schools report the use of patients and families as important and effective resource persons (100) (79).

The recruitment of faculty, expert both in the field of nursing and the psychology of adult learning, has been identified as one of the major problems in selection of teachers (100), (90). Another is the heavy responsibilities which the regular faculty carry in the undergraduate and graduate programs. The policies of some universities prohibiting payment to faculty members participating in continuing education programs is said to further aggravate the situation (92).

Recent literature suggests that many university schools of nursing are attempting to meet the acute shortage of skilled adult educators through intensive training courses for nurse faculty, inservice coordinators, and public health nurses (38), (39), (40), (41). In addition, at least 2 RMPS have engaged full time personnel to assist inservice educators to improve their programs and to prepare local nurses to plan and implement programs of inservice education (24).

Finances:

As in the other health professions, continuing education in nursing has been the recipient of grants from the Kellogg Foundation (115), (100), (19). Other sources of funds include donations, course fees, professional associations, employing agencies, and government grants (27), (115), (66). University schools of nursing in the United States appear to be in a much more enviable position than those in Canada. In fact to date, medicine and nursing have received the lion's share of funding for continuing education through public law 89-239 (23).

Other lucrative sources of revenue in the United States have been the federal short term training grants through the Manpower Training Act (66), the NIMH (National Institute of Mental Health) grants (119), and the twelve month grants through the U.S. Public Health Service, Division of Nursing (83). Despite such a diversity of sources in the United States as in Canada funding is said to be inadequate (116), (90). The main problem seems to be a shortage of funds for continuing education which requires a secure financial base. In fact, the pace setting schools of nursing appear to be those which have had considerable financial support from the university (115), (26).

Publicity and Promotion:

The promotion of continuing nursing education is achieved through the usual brochures, nursing association newsletters, newspapers, and nursing journals. Of these standard methods, the Wisconsin study (28) found that brochures and fliers sent to hospitals and other employing agencies were the most effective means of reaching nurse practitioners.

In order to facilitate advanced planning by the employing agencies and nurse practitioners, some universities are publicizing their program offerings once a year in the form of calendars (18), (114), (100). Since January 1971, the *Journal of Continuing Education in Nursing* has included an "Educational Opportunities" section as a further aid to those nurses interested in attending programs both within and without their state.

As in dentistry, it is not unusual for course sponsors to offer credits or certificates for course attendance. In Gwaltney's survey (49), 7 schools of nursing reported offering credits while 25 did not. Credit was used most often by schools offering extension work in some courses unrelated to degrees.

Program Planning:

Most of the university schools of nursing use permanent or rotating committees to assist with the overall planning. Committee members usually consist of both school faculty and outside resource persons. In addition, special committees are organized to plan individual program offerings (115). The personnel in these planning groups are selected on the basis of their expertise and interest in the particular program being planned (100), (115). Reports on inservice education suggest that most programs use committees for planning (45), (42), (87). In the CNA survey (95) it was found that general staff nurses and nursing assistants in some hospitals each appointed committees to plan programs for their own groups.

As in medicine and dentistry, nursing appears to make extensive use of participants' opinionnaires as a basis for program planning. However, as in most fields of adult education, these surveys do not identify the participants' real learning needs (92). Straub (107) found that even when the nurses selected the content, helped plan the program, and had time provided so that they could attend, more than one quarter of the nurses did not attend the majority of the meetings. She also observed that attendance was much lower for those meetings devoted to nursing care and interdisciplinary matters. Straub asks:

> Should the content for inservice education programs be determined by the nurse practitioners? Or should additional topics be suggested by people in leadership positions such as the head nurse, supervisor, and director of nursing service? Persons in these positions might have a different concept of the needs of nursing personnel because of their postions, experience, education and the like?

Grosicki (47) surveyed needs in one Veterans' Administration Hospital and found that while many different viewpoints had been incorporated into the carefully planned programs, most of the activities met the immediate needs of the situation, but were lacking in continuity and overall program goals. Primary emphasis had been placed on functional competence, particularly the efficient management of the unit, and "this area showed the greatest increment of application. In other subject areas, very little of what had supposedly been learned had been put into clinical practice. The greatest deficit appeared in clinical competence."

In a similar vein at the Williamsburg conference (90) it was agreed that the two most serious deficiencies in continuing education were: 1) the lack of continuity between knowledge and its utilization and, 2) the problem of unmet and unidentified learning needs. More recently, under the auspices of the WICHE:MSRMP, the Committee of Continuing Education for Nurses in Idaho (120) has drawn up a proposed program based on the philisophy expressed by Miller:

> It would seem that the time has come to try a different educational model .... one built upon solid evidence about the way adults learn, rather than upon the time honored methods of teaching them. There is ample evidence to support the view that adult learning is not most efficiently achieved through systematic subject instruction, it is accomplished by involving learners in identifying problems and seeking ways to solve them ....

In keeping with this philosophy, this program will be introduced in phases with the major emphasis during the first phase on the learning process. Group meetings in the clinical areas will be utilized with active involvement of the participants in analyzing and determining their own learning needs, and with instructors available who will be working with several groups simultaneously. Content material will be provided as the groups are ready for it. Existing resources will be used as required. Several instructional processes will be used in response to the needs expressed by the participants. As the programs develop they will be regionalized and ultimately integrated with continuing education programs for physicians and allied health professionals.

Continuous evaluation will be built into these programs through the use of objectives stated in behavioural terms. Participants, faculty, and the agencies where nurses are employed will participate in the evaluation of the project. More specifically, the evaluation will attempt to: 1) appraise the participants' ability to identify their own educational needs and to establish goals for sustained 'self education' through the use of available resources; 2) determine the extent to which the quality of patient care has improved and to what extent the facilities support continuation of the program, and 3) a general analysis by the faculty of the co-operative approach to continuing education and its value to participants and their employing agencies.

SOME SAMPLE PROGRAMS

It is difficult to generalize about the instructional processes currently used in continuing nursing education. Nevertheless, a perusal of recent program descriptions suggests that a high premium is placed on small group discussion, hence it is not unusual for university schools of nursing to control enrollment, both in terms of numbers and according to such variables as area of specialization, position in the employing agency, and on occasion, years of experience (38), (39), (40), (41). The most promising approaches appear to be those which have managed to combine the classroom instruction with clinical practice.

Regional and Sub-Regional Programs:

In 1957, the Western Commission on Higher Education in Nursing (WCHEN) launched a centrally planned, regionally implemented leadership training program for nurses already employed in key positions. Financed by the Kellogg Foundation, the primary objective was "to aid the participants to become more effective leaders thereby improving patient care".

Several features distinguished this course from other previous efforts. It was scheduled on an intermittent basis, consisting of one week conferences separated by 3 to 6 months intervals extending over three years. During the interim periods the participants returned to their work settings to apply what they had learned, with consultation services available as requested. In this way nurses who ordinarily would not have been able to engage in further education were able to do so. Another aspect of this program particularly conducive to learning was the in-residence conference which took participants away from the work settings where they could freely exchange ideas and progress notes on problems in their home situations. Encouraged by the favourable response to this experiment, a grant was received from the Public Health Service, and the program continued (29).

Since the initial project, various alterations have been made in the program with the time span reduced to two years and, in some cases, one year. Techniques of instruction now include lectures, panels, small group discussions, and clinical experiences. To facilitate the application of new learnings, each participant selects some area of work in which she wishes to bring about change which she undertakes as a take-home assignment. These are discussed at the initial session and progress notes reviewed at subsequent sessions, both individually and in groups (68). Continuing evaluations have utilized a variety of techniques including observations of simulated nurse-patient situations, analysis of process recordings and diaries, rating achievement of course objectives, satisfaction ratings such as the Kropp-Verner scale, and Firo-B, which is a measure of group compatability (31). This program design is widely used in continuing nursing education. Most of the programs reviewed or mentioned in this section are replicas or modifications of the original WCHEN model.

Despite its successful application, and the high regard with which the WCHEN leadership programs are viewed, success has been difficult to measure in terms of behavioural change. Between 1962 and 1964, eight WCHEN programs were objectively evaluated using a variety of paper and pencil tests, scaled ratings of observed nurse-patient situations, and employer-employee ratings on the job. Four hundred and ten course participants and 450 non-course participants were examined on their before and after interpersonal relationships as well as other changes in behaviour. Although the evaluation found that the course significantly influenced participant attitudes and beliefs, no firm conclusions could be drawn with respect to actual changes in behaviour (60). An earlier, albeit less well designed study by Todd (110) disclosed similar findings.

Using the WCHEN pattern, the Texas League of Nursing sponsored a similar series of regional conferences for management personnel between 1960 and 1964. An evaluation of this series revealed findings consistent with those of the WCHEN studies. In brief, although the participants appeared to adopt a more democratic and understanding attitude, there was little conclusive evidence to suggest a change in job performance (72).

Commenting on the WCHEN findings, Ingmire (60) raises a number of crucial questions:

> How can the quality of nursing care be measured? What other instruments can be developed to measure nurse behaviours in the work setting? How can participants for future programs be selected who have the greatest potential for personal growth? How can the participants' learnings be extended into institutional systems more effectively? How can institutional administrators and colleagues of related disciplines be more closely involved in this or similar programs?

In an effort to tackle the multi-faceted problem of the institutional climate, Ingmire and her colleagues at the University of

California have extended the WCHEN leadership focus to many of their continuing education programs. Ingmire and Blansfield (59) have recently described one such program in which hospital administrators, directors of nursing, and deans of schools of nursing enrolled as teams "to learn new and revised theories of team building and to consider ways in which these theories could be applied in the back-home setting". The program consisted of three day conferences meeting three times over a one year period, which provided the teams an opportunity to utilize and reinforce conference learnings. The training laboratory or "T" group approach was used with theoretical material presented as needed but mainly to provide a focus for discussion and interaction among participants.

An evaluation of the program was conducted in two ways: 1) participants' perceptions of change in themselves and in their relationships with others; and 2) faculty's perceptions of change in the participants' method of interacting during the course of the sessions. Of the 39 participants who completed the first series of conferences, 27 responded to a questionnaire and the most frequently reported behavioural changes were increased understanding of themselves and others, and more open relationships. Of the reported changes in organization and management processes, improved meetings was mentioned most often. The most tangible evidence of the success of the course was the participants' request for an advanced training laboratory which has subsequently been implemented with high enrollment reported.

Brown (16) has reported a three year pilot project in which teams of instructors and supervisors were enrolled for a course on cancer nursing.

Co-sponsored by the Southern Regional Education Board (SREB) and the University of Texas, this course consisted of three conference sessions extending over a one year period. The major emphasis was on the nursing care of patients and families. The sessions also stressed and demonstrated the multi-disciplinary approach. One of the major take home projects was the development of a plan for extending the knowledge and skills participants had acquired to other nurses in the back home setting.

Although well conceived, Brown reports that many difficulties ensued in the implementation of the program. Because this type of an educational experience was so new to most of the participants, and because they had such varied backgrounds, instruction had to be provided on an individual basis frequently. The greatest problem related to those assignments requiring participants to engage in direct nursing care. Both the instructor and supervisor participants were found to be psychologically insecure and reluctant to communicate with patients and families.

Truscott and Keller (112) have described an interdisciplinary program in use in the North Carolina RMP stroke program. This four day course is offered in two day units with a week in between. Content identified as pertinent to all participants, physicians, nurses, physical therapists, speech therapists, occupational therapists, and medical social workers, is presented through joint session. Instruction includes lectures and discussions supplemented by slides, films and filmstrips. Also provided is a loose-leaf notebook with review notes pertinent to each discipline. Four such courses have been completed with an attendance of 154 professional health workers. As a result of this experiment it is felt that the basic core content has been identified and that the participants are developing a better understanding of the meaning of rehabilitation and their interrelated roles in the management of the stroke patient.

Truscott and Keller (112) reported that great gaps were found to exist in the participants' knowledge of the care of the stroke patient which posed a real problem as did the associated unlearning which was necessary in some instances. Although participants were identified as a "stroke team", the team concept as an approach to care was often not understood or implemented. In joint sessions, physicians were reported hesitant to ask questions because nurses were present, and nurses were equally reluctant to expose gaps in their knowledge. Some participants were facility rather than discipline oriented in that their interest in stroke patient care was limited to its application in their own particular type of facility. Thus public health nurses were not interested in acute nursing care and nurses employed in acute hospitals were not interested in the community aspects. Similarly, participants from small rural communities were not interested in hearing or discussing facilities which were not available in their own home settings. Generally speaking, "Health practitioners were more interested in the "how to" rather than the "why" or the philosphy of care".

In a recent article, Conley and Larson (24) report that the Colorado RMP and the School of Nursing are offering an interdisciplinary course in Rehabilitation and Maintenance. This program is intended to develop skills needed for "post crisis" patients and it is offered in small rural communities throughout the region. Local planning committees composed of representatives from nursing and the allied health professions identify educational needs and develop the program with the assistance of university faculty. Local health personnel are utilized as instructors with the university providing assistance as necessary. The course is highly individualized in terms of local needs and the needs of participants as well. Scheduled on an intermittent basis, the program consists of three 3-day conference sessions. Following the initial session, the participant selects a patient for whom she develops a nursing care plan. In the period between the second and third sessions she is asked to develop a teaching program for her selected patient. Instructors provide individual guidance to students throughout and each is encouraged to proceed at her own pace.

Conley and Larson (24) also report that the Western Pennsylvania RMP and the Graduate School of Public Health at the University of Pittsburgh are conducting a program for the long term training of nursing home personnel, using both university and in-patient facilities. The course consists of weekly sessions lasting one day for a nine month period. Formal presentations are minimized in preference to problem-solving. Where possible administrators and charge nurses have classes together. Following the completion of the program the participants are provided with consultation services by the faculty for a two year period.

According to Conley and Larson, the effectiveness of this course is demonstrated in the patient care facilities to which the graduates have returned. They cite new and improved nursing procedures that have been instituted in the home facilities, the establishment of positions for both a director and an inservice educator; job descriptions and performance evaluations for nurses have been developed, and inservice programs have been implemented in a number of facilities.

The MSRMP (Nevada) is using a Consulting Team approach to continuing education for health service personnel in rural communities in Nevada. The core of the consulting team consists of physicians and nurses with other health professions serving as resources where their skills are required. A bi-monthly schedule of visits provides consulting service to local communities. The program for each visit is based upon the identified needs of the community and is developed co-operatively with the health personnel in each area to be visited. Thus the team may provide either structured courses or unstructured consultation depending on the need.

The ever increasing demand for nurses with specialized skills in intensive care nursing, and more particularly, coronary care, has resulted in a great proliferation of short courses in this area of nursing. Of the many program descriptions reviewed, the one sponsored by the Colorado-Wyoming RMP and the University of Colorado School of Nursing (114) is probably the most comprehensive and well integrated. Scheduled on an intermittent basis, the initial two week session consists of lectures, self study, and practical experience followed by a six week interim in the participant's own work setting. During this period the trainee completes a special assignment "which involves identifying a problem in her clinical setting about which she develops a research-type project directed toward a solution". The second two week in-training session places considerable emphasis on clinical experience which is largely individualized to meet the individual's own particular employment needs. The last two days are devoted to management and co-operation between health personnel in clinical settings. For this last session, participants are encouraged to invite directors of nurses, hospital board members, hospital administrators, or others of her choice from the home hospital. Thereafter, a one week follow-up session each year is available to ensure the necessary updating of information and an evaluation of the program's effectiveness. Concurrently, the University of Colorado is offering a course on the intensive nursing care of children as a companion to the course on intensive care of adults. The sessions are conducted together where the two courses have material in common. In addition to the behavioural and physiological aspects of nursing care, this course emphasizes the nurse's role with the total family group and the team approach to patient care in the intensive care unit.

Inservice Education:

Del Buerno et al (33) described a special orientation unit with its own instructor and a head nurse particularly responsive to the needs of staff at the Presbyterian Hospital in New York. New staff members are rotated through this unit to receive necessary instruction and experience on all three shifts under the guidance of an instructor or charge nurse. Although it is too early to evaluate the overall effects of this plan, it is thought that this program will help ultimately in decreasing the high turnover rate of nursing staff.

At Peter Bigham Hospital in Boston (103), nurses with less than six months experience are being rotated through two clinical specialties following a six month period in medical surgical nursing. Programs of inservice education are provided concurrently with these new experiences. In spite of the difficulties in implementing such an ambitious plan, the advantages are felt to be: 1) the nurse received a year of planned experiences during which time she has the opportunity to consolidate her medical surgical nursing skills and to sample two kinds of specialized nursing; 2) there is evidence of increased morale among the nurses: and 3) nurses are available to relieve in specialties when necessary.

At the University of Rochester's Strong Memorial Hospital (70), instructors have been assigned to each of the major clinical services which has made possible unit based clinically oriented inservice education and more individualized orientation programs. On the first day each newcomer completes a questionnaire which asks about past experiences and felt learning needs. Through an analysis of the information gleaned from the survey an individualized clinical orientation is then provided as part of the overall program.

Wilkinson (121) has reported an experiment in orientation at the Langley Porter Neuropsychiatric Institute of the University of California in which new psychiatric nurses engage in self-orientation. In this experimental project, the environment was structured to make available selected learning opportunities and the nurses were informed about them but no attempt was made for structured learning activities. The only specific requests made of the new staff member was that they tape a report at the end of each day which was a resume of the day's activities, and they were asked to inform the school when they terminated this self orientation. Findings revealed that the orientation was highly individual, with no two nurses proceeding in the same manner yet all of them involved themselves in those activities which they considered significant to their orientation. From the tape recordings it was apparent that as the days progressed, the nurses became increasingly aware of what they must learn in order to function as well as others. This procedure was identified as the "self identification of continuing learning needs".

At the Loeb Center for Nursing and Rehabilitation in Montefiore, New York (3), the new nurse is assigned directly to the unit to work with a staff member who is thus available to her for help as she identifies a need or expresses an interest. Opportunities for conference are also available where she may receive clarification on matters of policy and/or procedures. Through this program the newcomer is encouraged to identify her own need for help and is given the time to plan her own orientation. The inservice education program at the Loeb Center is probably one of the best examples of how continuing nursing education can be built into day to day practice. Staff conferences scheduled once a week for all nurses involved in the program provide opportunities for group discussions about ways to facilitate care and to clarify varying types of problems which nurses identify as interfering with their work with patients. Unit conferences are held as the need arises and nurse to nurse reports from day to evening shifts are described as "conferring, planning sessions", rather than the usual recitation of activities.

Regularly planned conferences and teaching on the wards also typify much of the inservice education at Rancho Los Amigos Rehabilitation Center in Los Angeles (16). In addition, workshops on rehabilitation nursing are also scheduled regularly. These courses are available to nurses from general hospitals, special long term hospitals, nursing homes, visiting nurses associations, and public health agencies, as well as the staff at Rancho Los Amigos. Interdisciplinary in approach, some of the sessions include selected patients who present pertinent aspects of their case histories and discuss their perceptions of the treatment process.

Of the growing number of programs preparing pediatric nurses, the one at Bunker Hill Health Center in Massachusetts (11) best fits the definition of continuing education used in this report, hence a description of this program is provided as an example of an innovative program designed to expand the role of the nurse. In 1968 a sixteen week program was started which allowed a nurse to continue her regular schedule but with a minimum of one and a half days per week release time for the duration of the course. Admission requirements were: 1) that the nurse trainee already hold a job or have promise of a job with a practitioner who provided pediatric care for all children in the family; 2) each trainee be guaranteed the opportunity by her employee to function in an expanded role in her work setting; 3) on the job training be provided by a qualified pediatrician during the course; and 4) opportunity for on the job training be assured following completion of the program. No special educational qualifications were required other than successful graduation from an accredited school of nursing.

The course was divided into 94 hours of classroom instruction, and 96 hours of clinical practice in a variety of in-patient and pediatric ambulatory settings. Clinical practice also included specially arranged experiences in the nurse's own work setting under the preceptorship of the pediatrician and the supervision of the Center's nursing faculty. Through seminars and individual supervision, the following factors were emphasized: 1) the decision-making process 2) conflict and anxiety in role re-orientation; 3) team work and interpersonal relationships; and 4) the problems of delivery of health services to children and their families.

Since the first two courses were considered experimental, no attempt was made to make an objective evaluation, however, certain personal-professional characteristics were tabulated. This disclosed that roughly one half of the participants had a diploma, approximately one third a baccalaureate, and five had a master's degree. About one half had had no prior pediatric or public health nursing experience, and most of the rest had less than five years experience in either field. In short, they were a relatively inexperienced and youthful group. Concerning these data, the authors note: "In our experience nursing education background has had no relationship whatsoever to successful and satisfying function in the role of pediatric nurse practitioner. The same can be said of age, marital status, and number of children". They do point out that certain areas of content were weak, notably child growth and development and knowledge of common pediatric problems. They also felt that more time was required for the nurses to work through the problem of conflict and anxiety related to role re-orientation. This program has recently become associated with North Eastern University, which, according to Brown (16) "should provide the depth required to develop the kind of leadership needed to change the health care system".

Mass Media and Self Instructional Methods:

Since the completion of the statewide educational television network in Kentucky, along with the other health professions, nursing has been presenting programs on PANMED, and interprofessional television series. From November 1969 to November 1970, nursing presented eight programs in this series. A survey (14) based on 587 questionnaire responses (66 per cent of the registered nurses in Kentucky) disclosed that the majority of nurses watching the series were young graduates from diploma programs working general duty in hospitals. The overall reaction to the programs was favourable, with many respondents indicating that they felt PANMED programs could be used by nurses to continue their education. The major criticism of the series was a lack of knowledge about the program. More specifically, 174 of those who did not watch any of the series indicated that they did not know it was to be shown, and another 33 "thought it was a refresher course for nurses". The second major complaint expressed by those who watched was that the reception was poor, with 98 reporting that they were unable to get the series.

On the basis of these findings, it was recommended that the series be continued, but that some method for evaluating its effectiveness be instituted. It was also recommended that the series be advertised better, and that it be shown at an earlier time. It was further suggested that the programs be made available through closed circuit television in the public colleges; "These could then serve as centers for feedback and evaluation of some of the programs offered".

Abbey et al (1) reported an experiment using open circuit television in which they sought to determine whether nurses gained more from a broadcast viewed individually at home or from one viewed with a group of colleagues in a hospital conference room. They also attempted to identify those conditions which enhanced learning compared with conventional broadcasts which require no active participation. In this experiment, three response conditions were used: 1) the control condition or conventional broadcast presentation; 2) experimental conditions consisting of a "covert" presentation in which questions were inserted into the broadcast with students encouraged to think of the answers for themselves; and 3) an "overt" condition in which the students were rewarded for making a written response to the questions by being provided with knowledge of results by return mail. Participants included 120 general staff nurses drawn from each of three geographically separated cities which participated in the study. In each city, 20 respondents viewed the offerings individually at home, and 20 did so in a group setting.

The program was sponsored by the University of California School of Nursing as a tuition course which carried a certificate of completion. Learning achievement was measured by a sixty item multiple choice test, while attendance was measured in two ways: 1) subjects who completed the course indicated on a special form which programs they had viewed; and 2) actual attendance of subjects in the hospital setting was recorded for each broadcast. The findings revealed no significant difference in regularity of viewing and completion of the course according to presentation response conditions. Although the results on the presentation response conditions were statistically inconclusive as measured by test results, home viewing was found superior to group viewing as measured by learning achievement. The report concludes:

> If only group viewing at central location were effective, broadcast television would have limited instructional potential. The findings of this study indicate, however, that through home viewing, broadcast television has the potential to serve all health science professionals, including those in which members spend their working day separated from each other".

For the past several years the University of California School of Nursing in Los Angeles has been offering televized programs via the scrambled network system. The series is presented on the Medical Television Network to 70 member hospitals. Nurse co-ordinators in each of the hospitals are assigned responsibility for publicizing the programs, organizing the viewing facilities and introducing and conducting a fifteen to twenty minute discussion following the program. Approximately 13,000 nurses and members of other health disciplines are reported to have viewed the series.

The programs are patient centered and frequently have used actual patients as well as health personnel with emphasis on demonstration. Squaires (106) identified the major problems encountered in the first five years of the program: 1) poor selection of program chairman; 2) too much content; 3) not enough depth in content; 3) no permanent staff; 4) no money for implementing programs as part of the continuum of continuing education offerings. She also reports that portable equipment is being taken into the field for live conferences and that this approach has been found effective in developing counselling interviewing techniques.

The Ohio State University School of Nursing and the Department of Nursing Services of the Ohio State University Hospitals (80) are broadcasting two-way radio telephone programs to 48 of the state hospitals to enable scattered audiences to participate in programs of continuing nursing education. Attendance is reported to have increased from some 2,000 during the pilot project in 1966 to over 10,500 for the 1969-70 series.

The programs consist of a lecture or panel presentation followed by questions and comments from the participating hospitals through their moderators. Each hospital is furnished a quantity of printed outlines and a set of 2 x 2 slides which are used in conjunction with the presentations. "Interest and enthusiasm" for the program is said to be a motivating factor in the continuation and expansion of the series.

In 1966 the University of Wisconsin (52) initiated the first statewide telephone conference for nurses. Fashioned after the telelecutres developed for continuing medical education, this series was offered as a lecture followed by a question and answer period. The 12 classes presented weekly were received at 24 centers located in various clinics and hospitals throughout the state. Co-ordinators assumed responsibility for showing accompanying slides and serving as moderators. Since the original series, improvements in technology have made possible simultaneous transmission on FM radio. There are presently 56 telephone listening posts, and 27 radio listening posts, with about 1000 Wisconsin nurses participating in this weekly series.

On the basis of a 20 percent return (N=209) of evaluations for the 1967-68 series, Hornback (92) reported: 1) the majority of the participants were currently employed in nursing; 2) for approximately one half of the respondents the telephone conferences comprised the first continuing education program attended; 3) most respondents felt satisfied with the programs but many thought that there were too many.

Since 1969 a special radio-telephone series has been offered for inactive nurses in order to help them keep up to date on general nursing knowledge. Funded by the Wisconsin RMP, this series is but one facet of the Wisconsin Inactive Nurse Service (WINS). Another is a project in which independent study guides are being developed on a number of topics requested by inactive nurses (2). Yet another innovation pioneered by medicine and which nursing now shares is the dial access library (77). Nursing Dial Access was initiated in 1969 after a four month trial period. It consists of a number of pre-recorded five to seven minute audio tapes on a variety of nursing subjects. The nurse dials a special telephone number and asks for the tape she is interested in hearing. The record is then played for her over the telephone. The service is available without charge to all Wisconsin nurses. A recently completed evaluation of the program found that more than one thousand calls are being received per month, with two-thirds of them between noon and midnight; nurses in more rural areas utilize the service more often than do their urban counterparts; hospitals, nursing homes, and schools of nursing make the greatest use of the program (104).

In view of the many problems confronting inservice education, it is surprising that greater use has not been made of the newer educational media and, more particularly, self instructional methods. The only innovative program reported was that described by Lindeman and Aernam (67), which was conducted at Luther Hospital in Wisconsin. Using a portable slide/sound projector, the nursing staff at this hospital are developing their own self-study packages on various nursing procedures.

Dubin, Marlow, and Alderman (37) surveyed the use of correspondence courses in hospitals. They found that hospital administrators and department heads in the United States generally lacked information about this method and that it was rarely used for inservice education. On the other hand, hospital administrators in Canada were found to make fairly extensive use of correspondence courses for their employees. With the exception of the CNA-CHA Extension Course on Unit Administration, this review found no descriptive studies on its use in either country, and the same was true for programmed instruction.

RECURRING ISSUES AND TRENDS

The issues confronting nursing education are not too different from those facing medicine and dentistry; however, continuing nursing education is faced with some unique problems related to the ambiguity surrounding nursing, as well as the need to "upgrade the education of nurses who have graduated from programs which differ widely" (51). Adding to the confusion has been the recent emphasis on the expanding role of the nurse. Nukoll (78) reported an analysis of a recent mailing from the American Academy of Pediatrics which found that 24 of the 34 training programs listed for pediatric personnel were designed to admit nurses. Of these, only 6 required a B.S.N. degree for admission. The duration of the programs ranged from 16 weeks part-time to 18 months full-time culminating in a master's degree. These data suggest that there is as yet no consensus on the educational preparation of pediatric nurse practitioners. In the meantime, Hutchison (56) has warned:

> There is imminent threat of crash programs developing outside the educational mainstream. The preparation of the pediatric nurse associate falls squarely within the generally accepted scope of continuing education since the programs seek to further prepare the practitioner nurse.

She urges that continuing education faculty ensure that the minimum standards outlined in the guidelines for Pediatric Nurse Associates be followed and that leadership be exerted to ensure that sound programs develop under the sponsorship of university continuing nursing and medical education.

As noted earlier, Cooper (48) has expressed concern from another point of view. She queries whether short term courses preparing physicians' associates "will prevent a rapid and necessary increase of nurse specialists at the graduate level". Related to this problem is the question as to whether continuing nursing education should make special provision for the granting of credits toward college degrees in an effort to enable the vast number of experienced and capable nurses to obtain recognition for their clinical capabilities. On this issue, Squaires (21) has advanced this view:

> Continuing education should facilitate the passage from one level to another without lowering standards. This can be done by careful study and re-designing of curriculum. Keeping standards at the forefront but not allowing tradition to dominate, continuing education should be involved in the planning and provision of courses to move people along the way.

Even as these issues are beginning to be seriously discussed by nurse leaders, nursing like all the health professions is moving in the direction of mandatory continuing education as a requisite for practice. In 1970, the California Legislature passed a bill which specifies that after January 1, 1975, nurses and other health professionals will be required to submit proof that during the preceding two years they have informed themselves of developments in their fields, either by successful completion of examinations, or by pursuing an approved course or courses of continuing education (65).

At the same time, nurse educators are unanimous in agreement that should mandatory continuing education be implemented, colleges and universities could not produce the required courses at present (51). Indeed, with the exception of a few universities and regional efforts to develop continuing education programs from the perspective of long range co-ordinated planning, continuing nursing education has been described as "unrelated, ad hoc measures, lacking continuity and follow up" (92).

CHAPTER X

SUMMARY

Registered nurses are the largest single group of health professionals. This group is made up largely of women, of whom well over one-half are married, and approximately one fourth of the group is employed part-time. There is a large inactive group of nurses, many of whom would be willing to re-enter the work force. Entry into the profession is achieved through either a diploma or a degree program but the vast majority of nurses have no academic degree. Where private duty nursing was once the major field of employment, over 83 percent of the employed nurses are now working in hospitals and nursing schools.

The role of the nurse in patient care is in a state of flux with the new role not yet clearly defined. As it emerges, the trend is toward expanded responsibilities both in general nursing duty and in specialization. This is creating new dimensions to the knowledge required to perform new or modified tasks in patient care that results in the need for systematic learning at all levels within the profession.

There have been four major developments in nursing over the past decade. These are: 1) a re-orientation of graduate nurses back to the bedside; 2) a trend toward clinical specialization; 3) an increased effort to define nursing practice through research into patient care; and 4) changes in the reciprocal roles of physicians and nurses. Inservice and continuing education have been identified as important vehicles for facilitating these trends, and indeed, for solving many of the problems in nursing.

While the identified learning needs relative the broader areas of nursing are not at all surprising, a number of studies indicate that nurses at all levels are insecure in their present positions and that they are concerned regarding their future in nursing. Furthermore, the few studies which have attempted to determine not only what nurses believe they need, but also their real learning deficiencies, suggest that the learning needs of registered nurses are numerous and diverse.

While inservice education offers the greatest potential for the development of clinical competence, its potential has hardly been touched. On the other hand, although continuing nursing education at the university level is in its infancy, it is faced with some extraordinary demands, which the majority of schools cannot cope with at present, neither in terms of faculty, facilities, nor finances. What is required, therefore, is a clearer delineation of respective roles of the university schools, the employing agencies, and the professional associations who are the three major sponsors of continuing education in nursing. More specifically, in view of the evolving trends in nursing, it would seem that the university schools should focus on the development of leadership and consultant services to the employing agencies rather than investing scarce resources in short course offerings which at best only serve to meet the pressing needs of the moment.

Continuing nursing education should exert leadership in the development of new instructional materials and program designs. As noted by Conley and Larsen (24), most of the innovative programs in nursing funded through public law 89-239 have been innovations in organization and administration rather than in educational design. This is equally true with respect to most of the other innovative programs described above.

Joint planning and the co-ordination of resources at all levels are also indicated. In addition, the health professions might profitably pool resources and work together in developing clinical programs, for as amply demonstrated in this review, some of the most "successful" programs in nursing have been those which have been developed within the framework of a health team approach.

In order that continuing education in nursing can achieve the learning and changes in behaviour that are required by the expanding role of the nurse in patient care, it is necessary that educational programs be developed that are functionally efficient as instruments for change. This can only be accomplished through the design and management of programs that are geared to adult learning. Among the several health professions, nursing has been the first to accept the need for specialized skill and knowledge in adult education as a pre-requisite for educational planning. As this trend continues, it will provide the profession with a cadre of skilled educational specialists to ensure that continuing education programs will meet the need for learning in the progession.

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PART FOUR

CONTINUING EDUCATION IN DENTISTRY

CHAPTER XI

THE PROFESSION AND CONTINUING EDUCATION

The individualistic nature of dental practice and its relative isolation from the mainstream of general health services has several important implications for the development of continuing education.

COMPOSITION AND DISTRIBUTION

Like physicians, dentists are not being produced in sufficient numbers to maintain what is considered by some to be an optimum ratio of dentists to population (56) (42). Despite efforts to expand dental school programs (56), population growth will continue to outstrip the production of dentists. In Canada, an equally pessimistic dentist-population ratio is projected for the years ahead (39). Population ratios do not necessarily reflect an accurate picture of the availability of dental services. Studies have shown that the use of dental auxiliaries can significantly increase the productivity of dentists. In both Canada and the United States, governments recommend that dental auxiliaries be trained to perform a greater range of duties than they are presently permitted to perform (42) (39).

Another important factor influencing the availability of dental services is the disproportionate distribution of dentists from region to region. As in medicine, the distribution of dentists in North America varies directly with the per capita income and the proportion of the population in urban communities.

Thus, in the United States the highest dentist-population ratios are found in the large urban communities of the North East and the least in the South (42). Similarly, in Canada the highest dentist population ratios exist in the large urban communities of British Columbia and Ontario and the least in Newfoundland (59).

Although specialization has occurred within the dental profession, only a small proportion of dentists are practising a specialty. McFarlane (59) reported that in 1962 only 3.8 percent of the dentists in North America were practising a recognized specialty. While there are no recent national figures, a survey in Ontario found that only 6 percent of the dentists were in specialty practice in 1968 (74). Moreover, a report in 1965 by the American College of Dentistry revealed that less than 10 percent of graduating dentists were going on to obtain graduate degrees or certification in one of the specialities of dentistry (68). Hence, while it is expected that specialization will increase appreciably in the future (66), it is not now a significant factor affecting the availability of dentists.

Practice Arrangements:

As in medicine, dentists also pool their facilities and personnel in order to meet the increasing demands on their services (59) (48). There is also some evidence that hospital dentistry is increasing (35) (48). Generally speaking, however, most dentists are still engaged in independent office practice (39) (43), and, as pointed out in the Report of the Committee on the Healing Arts, "Because they are so independent, dentists may find it relatively difficult to keep up with the development of dental techniques, and they may not be as exposed to the kinds of quality controls that physicians experience through hospital and other control institutions required for the treatment of their patients" (74).

Patterns of Work:

Hall (39) noted that about one third of the 216 dentists interviewed worked a 40 to 44 hour week. For the rest, there was a wide variation from a high of 55 to a low of 35 hours per week. Of the 155 general practitioners in the sample, 54 percent had at least one full time dental assistant while 69 percent of the 61 specialists had one or more full time assistants. Only 6 percent of the total sample made any use of dental hygienists and 46 percent of those not employing hygienists felt the idea was a good one but knew little about the occupation or were not at all enthusiastic about the re-organization that would be required to introduce one into the office.

The findings of the Ontario study (74) suggest that despite the growing importance of specialization and preventive oral medicine, most of the dentists' work is still "largely devoted to routine repair and replacement of decayed teeth, fitting dentures, and the treatment of common periodontal disease". According to this report, and implied in others (39) (59) (42), "The dental profession has not responded easily to changing public attitudes and needs, to new methods, or to the new ways of preparing dental personnel to provide these services".

Both from within and without the profession the proposal that continuing education be used as a vehicle for re-orienting dental personnel to overcome these deficiencies (72) is being advanced more and more frequently. More specifically, at a recent national workshop sponsored by the American College of Dentists (72) it was recommended:

1. That continuing education should not be limited to those subjects directly related to dentistry, but include areas that might have "spin off" benefits, e.g., sociologically oriented courses to provide better understanding of the needs, fears, and desires of the underprivileged, as well as patient groups which require special care in their treatment such as the chronically ill, aged, and handicapped.

2. That dental societies, schools, and other agencies develop continuing education programs in keeping with the preventive concept of practice, regardless of the student group for whom instruction is planned.
3. That dental schools implement programs which will provide training in the management and administration of the total dental health team for the undergraduate as well as the continuing education student.

While these recommendations capsule the major areas requiring attention in future programs, planning must also take into account the opinions of the consumers of continuing education. Hence, in recent years, a number of surveys have been conducted in an effort to identify dentists' perceptions of their learning needs.

NEED FOR CONTINUING EDUCATION

In dentistry the terms "graduate," "postgraduate," and "continuing" education have been defined by the Council on Dental Education of the American Dental Association (46) as follows:

> Graduate Education: refers to those programs which include a planned sequence of courses leading to an advanced degree, such as a Master of Science, the Master of Science in Dentistry, or the Doctor of Philosophy.
>
> Postgraduate Education: refers to those programs which include a planned sequence of courses and instruction that do not lead to an advanced degree, but for which the student may be awarded a certificate.
>
> Continuing Education: refers to those single courses of short duration (one or two days to several weeks on either a full time or intermittent basis), which are offered to provide practising dentists with information about new developments in dental technics and the science of practice.

Although these are the definitions generally endorsed by the dental profession, in practice the terms "continuing education" and "postgraduate education" are often used interchangeably resulting in considerable confusion.

In order to present this report according to the terminology used by the Council, programs of full time study intended "primarily to prepare dentists for specialty practice and/or for teaching in a clinical area" (66), were defined as postgraduate education and excluded from this review. On the other hand, since it appears to be common practice in dentistry to award certificates and/or credits for attendance at continuing education courses, "non-academic" credit courses were added to the foregoing Council's definition of continuing education and included in this review.

As a further clarification of terminology (12) it might be well to note that a continuation program in dental education includes the following:

> Seminars: A seminar is a group effort in study or research conducted under the leadership of one or more persons possessing special knowledge in the area of study.
>
> Study Clubs: A study club is an organized effort on the part of individuals to pool their knowledge and interest for the benefit of all participants. Study clubs may be of two kinds: 1) Where the objective is basically instructional, and 2) where the objective is basically investigative.
>
> Scientific Programs and Exhibits: Scientific programs are programs offered by organizations or institutions that offer lectures of discussions on various subjects of interest to the practitioners in an effort to keep the practitioners abreast of developments. Scientific exhibits offer further opportunity for this depending more on the visual aspects of the educational process.
>
> Extension Courses: Extension courses or programs offered by educational institutions are distinguished largely by the fact that they are made available outside the facilities of the school, such as a branch or by mail.
>
> Intramural Courses: Intramural courses or programs are those located in the universities' dental schools.

According to most writers, continuing dental education as presently constituted was a product of the second World War (57) (49) (55) (4). Up to that time there appears to have been few attempts to offer systematically any planned learning opportunities for dental practitioners. The return to civilian life following World War II of a large number of dentists, coupled with the revolutionary advances in all the health sciences, forcibly demonstrated the need for specific programs for continuing dental education.

In response to these needs, the W.K. Kellogg Foundation provided financial assistance to dental schools for the development of refresher-type programs , thus bringing the universities' dental schools into the mainstream of continuing dental education. A conference on continuing education was held in 1948 by seven dental schools which had been recipients of Foundation grants, and this appears to have been the first of a number of national conferences and workshops which have been held subsequently to "study the problems related to the establishment and conducting of programs of continuing dental education" (55) (19) (91) (72).

However, as noted by Mann (55) in 1964:

> Many of the 1948 problems remain, and totally satisfactory answers or solutions to them have not yet been developed...To-day, and probably more important than fifteen years ago, consideration must be given to the questions of what properly constitutes a total program of continuing education for the dental profession. What are the acceptable methods of continuing education that are or should be available within reasonable distance or expense? What can a dentist do by himself with journals or teaching devices, and what can be done by television? Should a total program have organization or should it depend upon independent groups, agencies, and institutions to provide a sufficiently broad spectrum or potential experience to care for the profession's needs? If organization is desirable, who should administer it?

These questions are still major concerns in continuing dental education today. In dentistry, as in all the health professions, there has been much discussion about these problems but few scientific studies on the ways and means of providing continuing education for dentists.

Probably the most significant national study was that published in 1960 by the Council on Education of the American Dental Association (46). It provided a comprehensive report on the changing nature of dental practice, and on the general status of dental education including continuing education. In 1964 the Committee on Advanced Education of the American Association of Dental Schools published the findings of a survey of dental school programs, faculty, and participants (hereinafter referred to as the 1963 Survey), which also provided considerable information regarding continuing dental education. A third national survey of note was that by the American Public Health Association (51) in 1964. This study sought to determine the general status of continuing education in dental public health, and more particularly, to identify the continuing education needs of dental personnel in public health services.

In addition to these, over the past few years there have been a number of regional surveys defining the expressed learning needs of dentists (63) (89) (1) (24) (65) (6), and a few pilot projects on extramural programs along with those using the newer educational media (27) (37) (32) (3). Generally speaking however, much of what has been written over the past decade have been opinions and viewpoints, particularly with reference to the main pre-occupation of the dental profession, "mandatory continuing education" (20) (25) (20) (30) (36).

CHAPTER XII

PARTICIPATION IN CONTINUING EDUCATION

Although there is no accurate data available about participation in continuing dental education in general, there is some data that suggests factors which may affect participation including location, field, patterns of practice, income, age, and the uses of information sources. Most writers estimate that in any given year less than 25 percent of the dentists in the United States participate in continuing education programs (6) (29) (43) (88). Two national surveys provide estimates of 40 percent (63) and 49 percent (84) respectively, but local surveys tended to be less optimistic. A survey of 34 percent of the dentists in Kentucky (24) revealed that 26 percent had attended one continuing education course during 1967-1968, 32 percent had attended two or three courses during this period, 25 percent had attended four or more courses, while 27 percent reported no course attendance. On the other hand, a review of attendance records at the University of Kentucky revealed that over a seven year period, the average annual attendance in programs offered at the university equalled the oft quoted national average of 12 percent (6).

In Minnesota, a 1963 survey (64) based on approximately two-thirds of the practising dentists in that state disclosed that roughly 43 percent had taken at least one course in the past two years, while approximately 17 percent had not taken a course for ten or more years. Similarly, a recent survey conducted by the University of California found that of the 102 respondents, 77 percent had taken courses within the past two years (1).

These data suggest that participation in continuing dental education varies with the nature of the sample population surveyed, the course sponsorship, and other related factors.

Location:

It would appear that the geographical region in which the dentist practices is associated with participation in courses. It has been found that dentists in the United States living in the west and in the east are more likely to have taken courses than those in other regions (65) (84). But this can be misleading since the highest percentage of dentists within reasonable access to dental schools are those located in the western and eastern states. Roughly one half of the nation's dentists are practising in locationsrelatively remote from dental schools.

In general, most studies reveal that while dentists will travel long distances seeking desirable courses (41) (6), the majority prefer courses closer to home. The 1963 survey of dental school programs (65) found that 46.18 percent of the course participants had travelled no more than 100 miles.

Field of Practice:

Dentists in specialty practice have been found to take or to have taken more continuing education courses than those in general practice (89) (1). In the national study reported by O'Shea (65), 86 percent of the specialists reported having taken courses whereas only 60 percent of general practitioners had done so. Among the specialists, more orthodontists were found to have taken courses than those in other specialties. This study also revealed that dentists who engaged in teaching and/or research, were more likely to participate in continuing education than those who engaged only in practice.

Patterns of Practice:

Questionnaire responses from over 4000 dentists in the six New England States (89) revealed that dentists in partnership and/or located in a dental building, were more likely to have taken courses than those in solo practice or located in non-dental buildings.

On the other hand, O'Shea (65) found that neither practice arrangements nor office location were related to course attendance; however, 72 percent of the dentists with two or more auxiliary aides had taken courses as compared to 53 percent with no auxiliaries. In addition, 72 percent of the dentists who scored high on the use of preventive procedures had taken courses in contrast to only 54 percent scoring low on their use. A similar trend was also noted with respect to the variety of modern equipment in use, "The more such equipment the dentist had, the more likely he was to have taken courses and to have taken them recently."

Income, Age:

Several studies reveal that dentists in the higher income brackets are more likely to take courses (1) (89) (65). In the California study, 66 percent of the respondents earning $11,000 to $15,000 had taken courses compared with 80 percent in the $16,000 to $30,000 income bracket (1). Similarly, in New England 57 percent of the dentists whose income was in the $20,000 or more bracket reported course attendance versus 39 percent of those whose net income was less (89).

A national survey by the American Dental Association (84) found that dentists in the 30 to 50 age range were found to enroll in courses of continuing education while beyond 50 there was a steady decline in participation.

Use of Information Sources:

Unlike physicians who tend to rank formal courses first or second in order of importance, dentists tend to rate reading, meetings, conventions, study clubs, and informal contacts with colleagues higher (90) (89) (63) (64) (23) (67). An exception to this rank ordering was found in California (1) where respondents rated continuing education courses as the most important way of keeping up with new developments. While this survey was based on a sample of University of California alumni and may be biased, this difference may be the result of the fact that the State of California has been very active in the field of continuing dental education (1).

O'Shea (63) found that a greater proportion of respondents who rated formal courses as the most important method of keeping current were also more likely to have taken one or more courses. Moreover, he found that dentists who used other means of keeping up were also more likely to have taken refresher courses. Attendance at local, state, and regional meetings showed a lesser relationship to course attendance than did participation in study groups and membership in general and specialty dental societies.

While reading is heavily endorsed as a way of keeping up to date, the Minnesota survey (64) revealed that 63 percent of the responding dentists spent less than five hours a month reading dental journals. In contrast, attendance at study clubs and discussion groups was fairly high, with approximately two-thirds reporting attendance at 40 or more meetings in six months.

A recent survey by the American Dental Association (84) revealed that 36 percent of the dentists responding belonged to study clubs that met regularly. Of this number, dentists in the North West region reported the highest study club membership (44.3 percent) while dentists in the New England states reported the lowest membership (28.7) percent.

Surveys of dentists in Colorado and Wyoming revealed that society meetings and study clubs were most often used as sources of continuing education by dentists up to age 55. Thereafter, journals became more important. It was also found that young graduates tended to rate their own practices "a very important source of continuing education" (23).

Reasons for Attending or Not:

Data gleaned from surveys suggests that from 70 to 90 percent of the dentists are willing to participate in programs of continuing education (89) (23)(24). In California (1), 80 percent of the respondents stated that interest in the subject was the major factor motivating attendance, 73 percent listed the improvement of office practice and procedures, 23 percent indicated a professional obligation, 5 percent were motivated by membership in the Academy of General Dentistry, and 4 percent attended as a result of a suggestion from a colleague. In Kentucky (24), 86 percent of the respondents listed subject matter covered as the most important stimulus to course attendance, 39 percent were drawn by the reputation of the clinician instructor, 34 percent by course location, 17 percent by the time of year, and 13 percent were motivated by the low cost of the course.

On the other hand the most frequently cited deterrents to course attendance (not necessarily in order) are: lack of time, distance (89) (24) (1), costs (24), uninteresting topics (1), and no courses available (23).

Sponsors:

Dental schools sponsored the majority of courses attended by dental practitioners with dental societies ranking second (63) (24) (64). Commercial organizations, hospitals, clinics, and other miscellaneous groups accounted for by a small percentage of the courses taken. On the other hand, dentists give first preference to courses sponsored by dental societies with dental schools rating second (23) (89), and a few indicate that they prefer small group sponsors such as study clubs (23).

Scheduling of Programs:

Dentists are more or less unanimous in their preference for courses scheduled on Wednesday (11) (47) (23) or week-ends (73) (23). The majority also express a preference for short courses lasting three days or less (11) (47) (23). A substantial number indicate that they would be willing to attend courses scheduled on an intermittent basis weekly or monthly over a period of time (24) (23) (47).

The choice of location for courses varies widely. The most frequently cited locations include: university dental schools; local hotels; local hospitals, or clinics; and community colleges (89) (23). In New England, dentists in states with a dental school (Massachusetts and Connecticut), cited the school as the most frequently chosen. location.

Tuition Fees:

The majority of dentists do not question tuition fees (47) (24). Cost is a deterrent more in terms of the loss of income and travel expenses than the fee in itself. One study found that 63 percent of the respondents felt that the cost of courses was about right, 25 percent thought they were too expensive, and 10 percent indicated that continuing education courses would be attractive even if the costs were slightly higher (24).

Felt Learning Needs:

Although varying somewhat in rank order, the course topics most frequently chosen by dentists in New England (89) reflect the subjects ranked highest in most other surveys (73) (11) (23) (1) (63) (64). These include: crown and bridge, complete dentures, periodontics, operative dentistry, and practice administration. In addition, other topics cited frequently include: diagnosis and treatment of emergencies (73) (23), and the use of dental auxiliaries (73). In New England (89),dental public health, hospital dentistry, and the care of special problems were the least preferred topics.

The Kentucky study (24) solicited dentists' opinions with respect to course offerings and content for auxiliary personnel. This revealed that 64 percent would like courses offered for dental assistants, and 35 percent indicated that they would be interested in participating in courses with their assistants. The most important courses for dental assistants were felt to be: office management, chairside assisting, dental health education, and dental radio-graphic technicians, in that order. Courses which were felt to be most important for dental hygienists were: dental health education and the use of mechanical scaling devices. Preventive dentistry and fluorides in dentistry were given top priority for hygienists in one study (24).

Most of the program directors who responded in the Dental Public Health Survey (51) in 1964 indicated that the greatest training needs were in the areas of public health administration and health education. Local program directors also rated training in clinical procedures high in their list of priorities.

Instruction:

Dentists express a general preference for teaching techniques which facilitate personal contacts. In New England (89), the techniques most preferred were demonstration..63 percent; participation..58 percent; lectures..51 percent; and discussion..46 percent. Least preferred were non-personalized methods such as television..18 percent, movies..13 percent; correspondence..4 percent, and teaching machines..3 percent. With the exception of television which ranked relatively high in interest value in several studies (23) (24), this list more or less reflects dentists' preferences with respect to instructional techniques.

The lack of familiarity with availability of educational media may be a significant factor in the low level of choice for the media. In the WICHE (Western Interstate Commission on Higher Education) survey (90), it was found that older dentists tended either to be unaware of the different sources of information or disinterested in those not available. Younger dentists on the other hand, were more aware of their need for a variety of different opportunities not available to them. The instructional processes not available but desired were: demonstration clinics..52.9 percent; television..51.7 percent; supervised clinical practice..50.8 percent; group discussion..47.2 percent; radio..42.8 percent; and lectures or symposia sponsored by local hospitals..42.6 percent.

Instructors:

In the Kentucky study (24), respondents were asked to evaluate university faculty members as instructors for continuing education courses. Forty-five percent of the respondents thought that university faculty did a better job of organizing and presenting material than did dental practitioners, but 55 percent thought that frequently faculty members were too academic in their approach, concentrating on research rather than practice matters. Some 16 percent thought that faculty were not as appealing as nationally recognized specialists.

CHAPTER XIII

PROGRAM ADMINISTRATION AND ORGANIZATION

The nature and structure of dentistry as a profession coupled with the geographical distribution of its members has created problems that are barriers to the systematic development of continuing education in dentistry. Although these barriers are by no means insurmountable, they do account, in part, for the slow growth of continuing education in the profession.

ADMINISTRATION

Continuing education programs in dentistry are sponsored by dental schools, medical schools, general and specialty professional societies, hospitals, graduate dental institutes, affiliate member institutions of the American Association of Dental Schools, and by private groups of dentists in a locality. Of these, dental schools are the principal sponsors of formal courses. In 1970 (13) (14) (15), dental schools in the United States and Canada offered 1,095 courses, as compared with 340 courses recorded as offered by all other sponsoring agencies. Of dental school offerings, in 1970 eighty-eight courses were designed specifically for dental auxiliaries which represents a substantial increase from 1965, when only 19 courses were offered to auxiliary personnel (16) (17) (18).

Insofar as it can be determined from course listings, some 60 to 70 percent of the courses limit enrollment to 50 or less and have stipulated the use of participative teaching techniques in addition to demonstration and lectures (13) (14) (15) (16) (17). In practice, however, it is reported that a high percentage of the courses use chiefly non-participative instructional techniques (10) (5) (45). In 1970, over 80 percent of the courses offered were of less than five days' duration and were designed for general practitioners. Tuition fees ranged from none to $700 for one twelve day course on Oral Rehabilitation. The most frequently offered courses were: Prosthodontics..252; Orthodontics...136; and Periodontics..98, with only 36 courses offered on Preventative Dentistry.

A survey (78) of over 200 continuing education programs in the State of Massachusetts in 1968 disclosed comparable findings. The majority of programs being offered were short term and heavily weighted towards clinical subjects. This study also found that 85 percent of all dental society meetings with an educational content were in the Greater Boston metropolitan area.

A 1963 survey (76) of 36 dental school programs revealed that the majority of courses being offered were located in the universities. These few schools reporting facilities other than campus locations listed local hotels, motels, and resort areas. A survey (51) of 46 dental schools in the United States and Canada disclosed that in 1965 only 8 schools offered 16 courses for dental public health personnel. Tuition for these ranged from none to $50, with little relationship between the amount of the fee and the length of the course. All courses were available to dentists and some to dental hygienists.

Administrative Arrangements:

The 1963 Survey (76) revealed that in many dental schools continuing education programs were organized on a rather informal basis. In 12 schools the responsibility for planning and implementation was delegated to the chairman of the postgraduate division, while in 5 schools programs were directed by the dean of the dental school, with course implementation being delegated to an advisory committee or director of continuing education. In another 5 schools the assistant dean was also the director of continuing education. The remaining schools reported a part-time chairman who had additional teaching responsibilities in the undergraduate division of the school. In most cases, salaries for those in charge of the continuing education program came from the regular school budget, but in no case was a supplementary salary given to full or part time faculty participating in programs, although guest lecturers from elsewhere were paid an honoraria in most instances.

Although detailed information concerning the administrative arrangements in other sponsoring agencies were not available, in the 1960 Survey of Dentistry (46), 25 of the 38 state societies which responded felt that they did not have appropriate committees for co-ordinating or implementing programs in continuing education at the state, district, or local level. More recently there is some indication that dental societies are becoming increasingly involved in continuing education in conjunction with dental schools, departments of public health, and other sponsoring agencies (76). The general impression is that in most cases continuing dental education is individually sponsored (53) (34).

Instructors and Facilities:

Lack of suitable facilities and qualified instructors have been identified as two of the major problems in continuing dental education (46) (62), and the situation does not appear to be improving over time. Although there have been many articles advocating the use of hospitals, mobile classrooms, television, andother facilities which may make continuing education more readily accessible to practising dentists, their use has been limited (77) (52).

Both Harris (40) and Romano (77) revealed that with the exception of dental scoiety meetings, television has scarcely been used for continuing dental education. Similarly, except for several recent pilot projects in the use of programmed instruction and teaching machines, self-instructional and other educational devices have yet to be explored.

There are many reports of attempts to upgrade instructor qualifications through in-service training programs; however, it appears that the majority of these are inadequate (43) (92) (79). Shepro (80) investigated teacher education in dentistry and found that most graduate and postgraduate courses on teaching placed a major emphasis on dentistry rather than on the science of learning and instruction. He concluded: "It is necessary therefore, to educate more teacher teachers before adequate in-service courses can be established" (80).

Finances:

Most dental school programs are relatively self-supporting except for overhead expenses. In the 1963 Survey (76) only 4 of the reporting schools indicated that they were operating at a deficit, while 26 schools reported that they had surpluses from time to time. O'Shea and Black (63) believe that this heavy reliance on tuition to cover costs has contributed to the tendency in continuing dental education to "provide courses solely to accommodate what the dentist may want rather that what he may need."

This market economy approach to continuing education also accounts in some measure for the paucity of innovative programs in continuing dental education. In 1956, Levy (52) warned:

> We are aware of the fact that education rarely pays for itself; the author personally feels that even on a postgraduate level it should not. If the benefits to be derived from extension education are to be continued, however, the dental profession

> must realize that no one institution can afford to bear all the cost, and that the profession must take a greater responsibility for finding ways and means of sharing the cost.

In this respect, while the language of Public Law 89-239 in the United States, "permits and even urges indirectly that dentistry be included in the policy structure of the regional medical programs...since the inception of the regional medical programs there has been little formal inclusion of dentists in the programs and little project development by dental agencies" (33). Indeed, with the exception of several very recent pilot projects, the findings of this review suggest that neither governments nor voluntary agencies have played a significant role in facilitating the development of continuing dental education.

Publicity and Promotion:

Programs are publicized primarily through course listings published in the January, May, and September editions of the Journal of the American Dental Association. Monthly announcements providing more detailed information on coming educational events are also published in the "News on Dentistry" section of this journal. In addition, specialty journals, brochures, special pamphlets, word of mouth, and personal communications, are other commonly used methods of publicizing course offerings (83) (10).

To encourage dentists to attend courses, sponsors of programs also report the use of various incentive plans, including credits toward certificates or fee discounts varying proportionately with the number of course hours of instruction attended (76) (86) (58). The University of Pittsburgh School of Dentistry has formed a Post Graduate Scholars Association. On completion of 100 hours of instruction a dentist is considered a "member" and is entitled to a 20 percent reduction in tuition; after 300 hours he becomes a "scholar", entitled to a 50 percent reduction in fees. These courses may also be used for credit in the Academy of General Dentistry, which requires regular participation in continuing education as a condition of membership.

Another interesting plan is offered by the St. Louis University School of Dentistry. To encourage the young dentist to continue his education, the dental school gives each new graduate five Certificates for Continuing Dental Education. The first entitles the dentist to a free course and the other four provide for half tuition. These certificates are valid for the first two calendar years after graduation (58). Some dental schools offer courses under a special dividend plan designed specifically for members of the Academy of General Dentistry (37).

PROGRAM PLANNING

Most of the programs for continuing dental education follow the traditional patterns encountered in all adult education. Program planning appears to rely heavily on participant opinionnaires. There are many descriptions of questionnaires used to ask participants what they liked or did not like about a course, or what they would like included in future courses. Other than one article by Barker (5) stressing the need for more clearly defined objectives, this search of the literature yielded no reports of attempts to identify real learning needs systematically, nor were any studies found which attempted to relate participation to actual changes or improvement in dental practice.

Darby and Weiss (22) refer to present course offerings as "an unorganized and unsystematic educational smorgasbord from which the individual dentist must choose what he thinks will be most useful to him". They note that relevant programs for continuing education must be directed towards a lifetime of learning consistent with three basic principles:

1. Comprehensive well organized and sequential programs.
2. Equal educational opportunities for all dentists...opportunities that are accessible, convenient, and continuously available.
3. Learning experiences that are compatible with sound learning theory and principles.

To fulfill these requirements, they call for the establishment of a national plan, much like that proposed in the Dryer Report (28) for the field of medicine. To achieve this long range goal they stress the need for coordinated action by all official and voluntary bodies concerned with continuing dental education. No pattern of co-ordination has yet been established that would be applicable everywhere, nor does it seem likely that such overall programming will be possible in the near future. Indeed, as noted by Furstman (34), "it has been impossible to co-ordinate all programs in any given state."

One step in this direction was reported recently by the Dental Society of the State of New York (9) which announced the establishment of a Bureau of Post Graduate Information which will compile and disseminate data on: 1) officially recognized teaching facilities and programs; and 2) current qualifications and postgraduate education of licensed dentists in the State of New York. This information should assist sponsors in eliminating duplication and it should ultimately facilitate in some measure the designing of programs for different levels of instruction.

From the few program descriptions found in the literature, the following examples illustrate the varied approaches which have been tried or are currently in use in continuing dental education.

Study Clubs:

Study clubs are a method of adult education unique to the field of dentistry. They began spontaneously as a systematic way for a small group of dentists to provide for their own continuing education. Two characteristics of study clubs make them particularly effective: 1) the members are involved in planning their own education, and 2) as small informal primary groups they provide for member interaction and facilitate the use of instructional techniques with high learner participation (87). Many study clubs provide their own programs and instruction drawn from the membership of the group while in other cases they seek expert instruction from elsewhere.

The organizing concept of the study club is not new in adult education as comparable groups have existed for centuries for different purposes. Benjamin Franklin originated such a group in Philadelphia which became known as The Junto. In every case, then as now, the study group is a significant method for providing a functional opportunity for continuing education that meets the real needs of its participants.

In the Guide published by the American College of Dentists in 1958 (12), the number and location of many study clubs was reported, including thirty that met regularly in Seattle, Washington. Other regions reporting numerous study clubs were Southern California, Oregon, and the mid-west. In recent years, dental schools and societies are sponsoring and encouraging the formation of study clubs (7). The University of Oregon plans and operates programs for study clubs, including the selection of instructors, course descriptions, and fees as with its regular short courses. The members of a club define their own goals and plan definite programs for the year with university personnel. During recent years, twenty-two such clubs met at the university and two in a Vererans' Hospital (87).

At the University of Illinois, Massler (57) reports:

> ...study groups of 8 to 15 practitioners register at the start of each academic year and each group determines the course of study it desires to pursue. The groups meet either once a month for a full

academic year or once a week for a full academic quarter. Outstanding men are recruited to meet with the groups.

Pavone (68) describes the University of California study club program as:

> ...one of the most exciting developments in continuing education for the general practitioner...These school-operated groups participate in discussions, seminars, clinical investigation, review of literature and clinical evaluation of materials and procedures. They offer one of the greatest potentials for short-term advanced training that has been conceived.

Regional Programs:

The University of Oregon School of Dentistry has initiated a regional program which brings instruction to dentists throughout the state. Called Friday Special, classes are held one Friday afternoon of each month at six different regional centers. One dentist in each area serves as co-ordinator and confirms attendance as well as participating in organizing the program in other ways. Courses have been presented as seminars, but future plans include a clinical approach (60).

The University of Pittsburgh Dental School is conducting a similar but more extensive program in 15 regional centers distributed throughout the state and in surrounding states. College classrooms, private dental offices, hotel rooms and hospitals serve as teaching facilities. Teaching techniques include closed circuit television, demonstrations, and lectures. The number of dentists attending any given program is reported to vary from 8 to 35. Local representatives are invited to the university campus once a year to review the past year's program and to assist in planning for the coming year (38).

Since 1964, the dental staff of a rural hospital in Poughkeepsie, New York, has been affiliated with a metropolitan teaching hospital. During a ten day educational program participants from the rural hospital spend a period of time observing and participating in selected specialty areas at the metropolitan hospital. Reciprocally, the staff of the urban hospital visit the rural hospital to participate in a one day and one evening symposium in the five county area served by the hospital. Subjectively, "it is felt that this affiliation is contributing to the individual's continuing professional education and is stimulating research motivation in the participant dentists who return to St. Francis Hospital to share their newly acquired skills and enthusiasm with non-participating dentists" (32).

Hospital Programs:

As hospital dentistry increases in importance, a number of sponsors are offering special hospital orientation programs for practising dentists. In 1969, the Pennsylvania Dental Association initiated a series of hospital training courses which were financed by the U.S. Public Health Service. Six courses of 10 to 12 trainees each were conducted in five Pennsylvania hospitals. Each course provided a minimum of 18 hours of instruction which included lectures and demonstrations on the use of drugs, laboratory tests, operating room procedures, and similar matters. Evaluation forms filled out by the participants indicated that the courses were helpful, and many felt that they should be longer (48).

The Glenwood Hills Hospital and the Easter Seal Society in Minnesota are also co-sponsoring a similar type of hospital orientation program. An evaluation of this two day program disclosed that dentists who had participated in the seminars were providing more hospital treatment for those patients requiring it (35).

Professional Meetings:

The American Dental Association's Annual Session is probably the most comprehensive continuing education program offered in dentistry. Extending over a number of days, its purpose is to keep practising dentists abreast of the latest developments in dentistry. The format includes panels, forums, symposia, individual essays, clinical lectures, table clinics, plus a variety of scientific exhibits. Attendance at these is reported to be 10,000 or more (75).

Television Programs:

With financial support from the W.K. Kellogg Foundation, the University of Illinois College of Dentistry is credited with the first use of closed circuit interstate television. This program, consisting of 4 weekly sessions, was accompanied by additional supplementary materials. As reported by Levy (52), this program was successful in every way except for the cost which was considered prohibitive.

According to Harris (40), the University of Pittsburgh School of Dentistry was the first to experiment with open circuit television in continuing dental education in 1960. This program consisted of 4 one hour dental clinics recorded on videotape and telecast on 4 consecutive Sunday evenings during off air time. Although the effectiveness of this program was considered favourable, George reports (38), that it was discontinued because of lack of funds.

In 1967 Ballantyne (3) reported a series of three weekly programs sponsored by the Oregon Dental Association, and telecast over open circuit television in Portland, Oregon. This program was designed expressly for dentists but was open to public viewing. A sampling of 45 dentists by questionnaire indicated that 44 percent thought the program was good, 31 percent excellent, and the remainder fair to poor. In concluding his report, Ballantyne comments:

> Much of the success of television programs depends on the ability of those presenting the material to project themselves and command the attention and interest of the viewers. Drawing the clinicians from lay members of the dental association presents difficulties. The use of television requires that all concerned learn special skills and techniques to be effective.

Since 1968 Tufts University School of Dental Medicine has been conducting an open circuit television series called Boston Dental Reports, fashioned after the Boston Medical Reports. The programs are produced through the facilities of Boston's educational television station and distributed to educational television stations in New England by the Eastern Educational Network. Aided by support from the U.S. Public Health Services Division of Dental Health and The American Cancer Society, the pilot series consisted of three 30 minute colour programs which were made available later to dental groups and study clubs (85). According to Dale (21), program effectiveness will be assessed in a number of ways: 1) audience participation; 2) knowledge gain; 3) utilization of new materials, techniques, and equipment; and 4) changes in concepts of dental practice such as work simplification, preventive dental procedures in dental practice, patient education, or changes in referring patients to specialists. Also included in future plans are "the use of satellite dental teaching teams with accessible mobile or fixed dental units for demonstrations or participation using modern teaching aids for fural dentists who are too busy or reluctant to travel distances for assembled education".

Drinnan and Greene (27) report on consumer evaluation of an open circuit television series. Consisting of ten one-half hour programs, the series was broadcast from four upstate educational television stations associated with the New York Network and one in New York City. Programs were announced in local dental Society journals, the press, and in television program guides. Of the 425 dentists responding to a questionnaire, only 205 or 48 percent of the respondents indicated that they had known about the programs. About 25 percent of these learned of the series through the newspaper, 25 percent through their dental society bulletin, and the rest by television program guides or by word of mouth from colleagues. Only 117 (58 percent) of those who knew about the series could receive the transmissions on their television receivers. Forty-five dentists indicated they had watched the first program, 42 watched the second, and 39 watched the third. Only four had watched all ten programs and 18 had seen only one. The main reason given by those not watching was the inconvenient broadcast time.

In discussing ways to improve motivation to participate in televized programs, the authors recommend: 1) that upon showing evidence of viewing the programs dentists be granted credits which could be applied toward continuing education requirements; 2) that dental societies or dental schools contemplating producing television programs seek the services of a professional consultant, a television director producer; and 3) that special efforts be made to publicize and acquaint potential viewers with details concerning the programs.

DiBaggio (26) reports that the launching of the largest state educational television network in Kentucky has resulted in a multidisciplinary approach to educational television for the health professions and the allied health groups. The co-sponsored series of televized programs called PANMED began in October, 1969. Although initially planned as a series of 15 programs, in which all the disciplines would be represented, the pressure of time resulted in the decision to use existing tapes and motion pictures for initial programs. In hopes that the health professionals in each discipline would view the entire series, schedules of programs were sent to all health professionals in the state.

A questionnaire was used to evaluate the first four shows. Of the 303 dentists responding, 130 (42.99 percent) reported viewing part one and 105 (34.6 percent) part two. DiBaggio concludes:

> The results of the survey seem to support an earlier study of continuing education in Kentucky in which it was reported that 12 percent of the state's dentists attend continuing education courses. Apparently, this percentage cannot be appreciably increased by bringing the programs into the home (13 percent watched the television programs devoted to dentistry).

Correspondence: Programmed Instruction:

The United States Naval Dental Corps has been offering continuing education through correspondence study since 1957. This consists of general courses on dental specialties and shorter topical courses which are structured in a format similar to that used in programmed learning. The target audience includes reserve officers and those on active duty. During the first five year trial period Heck and Lackey (44) estimated an enrollment of 7,000 with an 89 percent completion rate.

The Division of Dental Health of the United States Public Health Service has been experimenting with pilot projects utilizing programmed instruction on individual and group teaching machines. At the Division's Dental Health Center in San Francisco a team of specialists prepare programmed materials for machine presentation. To date, thousands of dentists have taken these experimental courses which are not available on a wide variety of subjects (61).

For the past six years the Division of Periodontology of the University of California School of Dentistry has been using programmed instruction in its continuing education projects. Under a grant from the United States Public Health Service, it is developing self-instructional materials on Periodontology specifically designed for general practitioners (69).

Information Retrieval:

The Dental Training Center located in the Veteran's Administration Hospital in Washington, D.C., serves as a major resource center for the production and distribution of audiovisual materials. Using the facilities of the hospital, the center has been developing 8mm. single concept films in such specialized areas as Periodontology, oral surgery, prosthodontics, radiology, oral diagnosis, and patient education. By the end of 1968, it was estimated that over 75 cartridge films would be available to support the educational programs for veterans' administration dentists. It was also expected that the films would be made available for purchase by interested individuals and groups (81).

The Audio-Visual Library of the American Association of Orthodontists is currently offering over ninety different slide-tapes and 16mm. films on different dental subjects on a loan-rental basis. In 1967, more than 2,000 individual programs were distributed to orthodontist departments at dental schools all over the world. Presently the Audio-Visual Committee is "investigating the use of photograph book-tape programs for individual use, use of cassette tapes, and other possible ways of expanding the value and use of the Audio-Visual Library" (50).

The American Dental Association Library, or Bureau of Library and Indexing Service (BLIS) located in Chicago, provides a two week loan service to association members anywhere in the country. In 1968, 10,268 books, journals, micro-films, and package libraries were reported in circulation. Another important part of the Bureau's function is the indexing of dental journals, and more particularly, its production of the Index to Dental Literature, in co-operation with the National Library of Medicine (71).

CURRENT AND RECURRING ISSUES AND TRENDS

The most significant development in continuing dental education over the past decade has been the increased demand for a change in state dental laws which would make participation in continuing education a requirement for practice. At least four states, including New York, Kentucky, Oregon and Pennsylvania, have made participation in continuing education mandatory. California, Minnesota, Missouri, and New Mexico are proposing changes in the law that would also make continuing education mandatory (25).

The issue remains highly controversial. Since the precedent set by the New York State Health Department's Title XIX of the Social Security Act, which "prescribes the standards of continuing education which dentists must meet in order to participate in the Medacaid program" (2), movement in this direction seems inevitable. Reasons for and against mandatory continuing education were summarized at a recent conference sponsored by the Philadelphia County Dental Society (54). In brief, arguments in favour were as follows:

> Tax supported health care programs are with increasing frequency requiring evidence of the competency of the professionals who will render the service. Hence if the profession does not set the standard and provide the mechanisms, for ensuring competence, government agencies will.
>
> The general impression is that many dentists are not keeping their knowledge up to date.
>
> The trend is in the direction of more rigid requirements in all segments of the profession, and this trend will probably be carried into the field of continuing education.
>
> The quality of dental servides would improve and the image of dentistry will be enhanced in the eyes of the public.
>
> Conversely, arguments against mandatory continuing education include:

> Continuing education is the responsibility of the individual dentist and the profession as a whole. More carefully planned quality education would provide the incentive for individual dentists to participate.
>
> Compulsion of any kind that would tend to coerce a group into forced education processes might result in an attitude of rebellion that would not be conducive to meaningful learning. Attendance of continuing education does not mean necessarily that the knowledge gained will be applied in practice.
>
> Self motivated learning is more likely to lead to a thorough and conscientious performance of service.
>
> There is actually no positive proof with regards to how much continuing education dentists engage in. This is particularly true with regards to how much a dentist reads on his own, how many scientific meetings he attends, or how often he improves his knowledge through consultation with colleagues.

In its 1968 Annual Report (83) the Council on Dental Education of the American Dental Association issued the following statement:

> The Council feels strongly that the final determination of the requirements and procedures to be utilized by agencies of the dental profession to promote and assure continued competence must be the responsibility of state societies and dental examining boards. It should be the prerogative of the boards and constituent societies to determine the amount of continuing education that should be expected of the practitioners in their states. It should be their prerogative to decide whether continuing education should be required for licensure renewal...

In this respect, a recent survey of state boards of dental examiners disclosed that more than two-thirds of the 43 responding boards felt that continuing education should be voluntary and expressed reluctance to pass legislation to make it compulsory. Most boards indicated that continuing education for dentists was not too successful. As one respondent put it:

> I feel that AADE should encourage continuing education, but there is a problem of good programs and facilities. If the programs are really good and offer what practitioners need you will not have to pass laws and require dentists to attend. Too many dental meetings offer the same old lectures and speeches that have been given over and over for years (38).

DiBaggio (25) suggests that a "realistic solution would be to teach the dentist to self-learn," but adds ruefully, "measurement of how well he does, presents certain problems".

In continuing dental education, needs and problems are by far more evident than progressive trends. Nevertheless, according to Weclew (88):

> The ideas emerging about continuing education for the general practitioner seem to be taking the following pattern:
>
> Every effort should be made and every means explored to motivate the practitioner to participate in continuing education.
>
> Relicensure should be regulated by the profession itself.
>
> A program and curriculum that would raise the level of all of dentistry should be developed:
>
> 1. Refresher courses should be planned to interest all dental graduates and should include a review of basic dental concepts and a resume of the newer concepts.
> 2. More sophisticated courses should be offered to those who have had the preliminary courses.
> 3. A program of continuing education of yearly courses to be attended throughout the dentist's entire professional career should be planned.
> 4. A postgraduate course that will lead to a certificate and diplomate in general dentistry should be developed, with the length of time to be extended so that the dentist can practice while attending school.

CHAPTER XIV

SUMMARY

Continuing education in dentistry has not developed as extensively nor over as long a period of time as has occurred in other health professions. This is due, in part, to the individualistic nature of the profession and to its relative isolation from the mainstream of the general health services.

Surveys indicate that while there is a shortage of dentists in North America, there is also a problem of maldistribution and ineffective utilization of available dental manpower. Furthermore, the traditional framework within which dental practice is organized serves as a barrier to innovation and change. Accordingly, the proposal is being advanced increasingly that continuing education must stress: 1) new practice methods, such as group practice or the use of auxiliary personnel; 2) greater social responsibility including care of special problems and preventive dentistry; and 3) greater integration of the biological sciences.

On the other hand, practising dentists are requesting short two to three day courses on "bread and butter topics which will be of immediate benefit to them" (38). There is some evidence that some dental practitioners feel that university faculty are not skilled in translating research into terms meaningful to clinical practice.

PARTICIPATION

The participation patterns of dentists are not materially different from those in the other health sciences. The two major deterrents to participation in continuing education programs are a lack of time and distance. While a lack of time is questioned by many (10) (31) (49), the geographical dispersion of dentists, both with respect to their practice and with reference to the location of dental schools, suggests a need for decentralized programs. In addition, since many dentists indicate a lack of familiarity with the newer educational media which could help to make education more convenient, there should be greater use of these in continuing dental education.

ADMINISTRATION AND ORGANIZATION

In terms of faculty, finances, and facilities, continuing education is given a secondary place in dentistry. There is also considerable evidence to suggest that many sponsors are providing courses solely to accommodate what the dentist may want, rather than what he may need. This appears to be related to two problems: 1) the heavy dependence on tuition fees to finance programs; and 2) the difficulties inherent in precisely defining educational needs.

Other major inadequacies identified in this review include: 1) the almost complete absence of program evaluation; 2) the lack of imaginative, innovative program models; and 3) the pressing need for decentralized programs which would make continuing education more readily accessible to practising dentists. Moreover, if an impact is to be made on the preventive and social aspects of dentistry, ongoing integrated programs are required. This calls for much greater co-operation among the various agencies presently offering programs..

Despite these and many other shortcomings, it would seem that the increasing trend toward making continuing education a condition for practice, has had some positive effects on the development of the field. Foremost it has forced the professional associations, dental colleges, and other agencies responsible for stemming the tide of professional obsolescence to search for new methods and approaches to the process of continuing education.

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PART FIVE

CONTINUING EDUCATION IN PHARMACY

CHAPTER XV

THE PROFESSION AND CONTINUING EDUCATION

With the transfer of drug production from the local pharmacy to a highly specialized pharmaceutical industry, the traditional combining and compounding skills of the pharmacist are fast becoming obsolete. At the same time, in the wake of the so-called "drug revolution," pharmacists have a major role to play in ensuring "adequate controls in the handling and dispensing of today's potent drugs" (30). Accordingly, the profession of pharmacy is presently seeking to define and interpret this mainstream professional function within the context of the changing health care system.

COMPOSITION AND DISTRIBUTION

Ross (33) surveyed the field of pharmacy in 1964 and found that the distribution of pharmacists in Canada followed a pattern somewhat similar to that reported for dentists and physicians. In short, British Columbia, Ontario, and Manitoba, reported the most optimum pharmacist/population ratios, while Newfoundland and the Yukon Territories reported the least favourable situation. In all regions the large urban centers were found to attract the greatest numbers and the younger pharmacists. A great majority of pharmacists in this country were engaged in retail pharmacy in 1962.

Although more recent figures were not available for Canada as a whole, pharmacist manpower statistics in the United States (11) and the 1968 Survey of Pharmacy in Ontario (22) suggest that the manufacturing and retail branches of pharmacy are still absorbing the greatest number of pharmacists. In the

TABLE VIII

PERCENTAGE DISTRIBUTION OF PHARMACISTS BY FIRST AND CURRENT EMPLOYMENT, 1962

Category of Employment	Percentage in First Employment	Percentage in Current Employment
Retail	90.64	79.60
Hospital	4.25	6.80
University	0.56	1.06
Government	0.07	0.44
Armed Forces	0.76	0.88
Manufacturing	2.89	7.17
Organizations	0.18	0.25
Retired		0.95
Outside Profession	0.65	1.81
Total:	100.00	100.00

SOURCE: Ross, T., Pharmacist Manpower in Canada; Royal Commission on Health Services; Ottawa, Queen's Printer, 1967, p.124.

meantime, there is evidence to suggest that hospital pharmacy is on the ascendancy and predictions are that as medical care becomes more hospital based it will become necessary to increase the number of hospital pharmacists and specialized training programs related to institutional pharmacy practice (10).

The proportion of women in pharmacy is reported to be increasing sharply (33). The Ontario study (30) revealed that in the 1967 graduating class of the Faculty of Pharmacy at the University of Toronto, 40.1 percent of graduates were women as compared to an average of 5.5 percent in the years 1926 to 1939. Hospital employment appears to attract a far greater number of female pharmacists that it does males (33). If these trends continue, they will have an important influence on the future nature of the profession. It can be expected that as the proportion of female graduates increases, a larger number of pharmacists will leave the profession at least temporarily after relatively few years of practice, and that an equally large number of pharmacists employed in hospital pharmacy will be part time workers. From the point of view of continuing education, this will mean that the profession will have to include in its long range plans an appreciable increase in the number of ongoing flexibly scheduled refresher courses.

As might be expected, faculties of pharmacy and research divisions in manufacturing establishments attract those few pharmacists with advanced degrees, while those with the minimum basic educational requirement are found primarily in hospitals and retail work (33). Brodie (10) notes, "that the future of pharmacy might well have been cast in a different mold had pharmacy chosen the model of medicine establishing the minimum educational requirement for practice as a professional doctor's degree." He believes that the development of a sound professionally oriented program of pharmaceutical education at the time medicine established its basic educational program would have kept the practice of pharmacy free of the commercialism which is said to have clouded the profession.

The Changing Nature of Practice:

Whatever its past may have been, the practice of pharmacy is changing rapidly. The pharmacist is no longer simply a fabricator and dispenser of drugs. This traditional function has passed from the practitioner to the manufacturer and, more recently, pharmacy educators have been advocating a new role variously defined in the literature as "clinical pharmacist," "therapeutic adviser," or even "clinical pharmacologist" (16) (29) (2) (18). Whatever the name used, and in spite of the minor differences in the functions proposed, in all definitions it is emphasized that the pharmacist must be available to provide precise information on medications to enquiring health personnel and patients (30). In short, this new role would establish the pharmacist as a "drug information specialist." The implementation of this new role is a major concern of the profession for while some hospitals have successfully placed pharmacists on nursing units and on ward rounds with physicians (23), the process of change has been slow. Moreover, studies have shown that health professionals tend to seek drug information from sources other than pharmacists (30) (23).

A number of studies have revealed that pharmacists are able to provide the factual drug information, but lack consulting skills although several studies suggest that knowledge deficiencies may exist (23) (24). Since most of these studies are defective with respect to research procedures, no firm conclusions can be drawn. Most writers agree that an important vehicle for helping pharmacists to assume this new role is continuing education.

NEED FOR CONTINUING EDUCATION

In pharmacy, continuing education refers to that phase of professional education which begins "after the practitioner has received his basic education, usually a Bachelor of Science or a Doctor Pharmacy degree, or after he has completed a program devoted to advancement in a particular area of his base education, usually a Master of Science or, more rarely, a Doctor of Philosophy degree and/or a hospital pharmacy residence." It's purpose, "is to provide a practitioner learner with knowledge, skills, attitudes, and insights, that will continue to increase his capacities and improve his professional confidence in rendering patient care" (12).

As in the other health professions, the development of continuing education is relatively recent in pharmacy. Blockstein (7) and others (14) (9), trace its beginnings to the Pharmaceutical Survey of 1948 (7) which brought the university pharmacy schools into the mainstream of continuing education activities. Its recommendations relative to institutions of higher learning were:

1. It is recommended that each of the accredited colleges and schools of pharmacy recognize and assume responsibility for providing organized programs of in-service professional instruction of the practising pharmacists within the area normally served by the institution, and to this end set up, under competent, professional direction, an operation unit to be known as the "division of pharmaceutical extension."
2. It is recommended that the duties of such divisions of pharmaceutical extension include the development of refresher courses conducted at the institutions, programs of reading correspondence study courses, and the systematic visitation and personal counselling of pharmacists.
3. It is recommended, in order to insure the maximum cooperative effort, that the state boards of pharmacy of each state take the initiative for the creation in the state of a Pharmaceutical Extension Council consisting of the dean of the college(s) or school(s) of pharmacy, the director(s) of the division(s) of pharmaceutical extension and representatives of the state pharmaceutical association and the state department of public instruction.

In response to these recommendations a number of pharmacy schools are reported to have established continuing education programs, and the concept of continuing education as a responsibility of the pharmacy schools gained in popularity, albeit slowly.

In 1955, the American Association of the Collegesof Pharmacy (hereinafter referred to as the AACP), established a Committee on Continuation Studies. Its purpose was to "study the problems of continuing education, make recommendations to the AACP, and to serve as a communication media among the member schools" (9). The annual reports issued between 1957 and 1967 have consisted largely of brief quantitative summaries of educational activities reported by member schools and comments with regards to reported problems. As early as 1957, the Committee recommended that a study be undertaken to determine the nature and scope of continuing education in pharmacy, yet it was not until 1967 that such a survey was actually undertaken (22).

The findings of this study reflect some progress where comparative data are available. Nevertheless, a more recent report by the Committee (37) concludes:

> It is difficult to find anyone who is satisfied with the present state of continuing education for pharmacists. Without impugning the fine efforts of some individuals, colleges, and associations, it is fair to state that more significant and successful continuing education programs are needed to help the practising pharmacists who are confronted by an ever increasing body of knowledge and by constantly changing conditions affecting their professional practice...it should be appreciated that the colleges must sponsor and direct the efforts needed to find solutions to the ever-present problems of continuing education, a low level of participation, inadequate or unsuitable programs, and insufficient financial support.

This review of the literature from 1960 to 1970 proved equally unrewarding. Only thirty three references were found which related to continuing education in pharmacy, and of these, only seven were of a research, or more correctly, survey nature.

Of the reports located, probably the most useful source of information for those developing continuing education programs, are the proceedings of national conferences held by the Teachers' Section on Continuing Education of the AACP. These have been published in the _American Journal of Pharmaceutical Education_ since 1964.

CHAPTER XVI

PARTICIPATION IN CONTINUING EDUCATION

Pharmacy has been the last of the major health professions to engage in the continuing education of its members. This involvement is of such recent origin that it is not generally recognized or accepted by either practising pharmacists or by universities. Consequently, there is a paucity of literature describing the extent of opportunities for continuing education or the acceptance of these opportunities by the profession.

Braucher (9) surveyed fifty-five colleges of pharmacy in the United States and gathered data about their programs in continuing education which gives some indication of participation by pharmacists. In presenting his data, Braucher indicates the number of pharmacists who were "promoted" or solicited to participate in courses and the number who actually attended. From these data he computes a participation index that is an interesting and curious statistic. In one respect this index is a measure of the percentage of the potential population that actually participated and, in another sense, it is an index of interest in continuing education and assessment of the effectiveness of the promotional activities of the sponsoring agencies (TableII).

Braucher's data covers two years and while there is generally an increase in 1968 over 1967, this is too short a period of time to indicate any trend toward increasing participation in continuing education by pharmacists. Between 1967 and 1968 there was an increase of 30.57 percent in the total number of participants in all courses reported. Furthermore, there was an increase from 5.64 percent to 7.31 percent in the percentage of the target

TABLE IX

A COMPARISON OF PARTICIPANTS IN AND THE PROMOTION OF COURSES OFFERED BY PHARMACY SCHOOLS IN 1967 AND 1968 BY SPECIALTY OF THE PARTICIPANTS

Specialty of the Participants	Total			Courses Sponsored by Schools			Courses Co-sponsored		
	1967	1968	% Change	1967	1968	% Change	1967	1968	% Change
Community Pharmacy									
No. Participants	3,649	4,071	11.56	803	1,237	54.04	2,846	2,834	- 0.42
No. Promoted	50,436	58,429	15.84	27,077	36,800	35.90	23,359	21,629	- 0.74
Participation Index	7.23	6.96		2.97	3.36		12.18	13.10	
Hospital Pharmacy									
No. Participants	597	749	25.46	144	171	18.75	453	578	27.59
No. Promoted	18,610	20,350	9.34	16,560	16,650	0.54	2,050	3,700	80.48
Participation Index	3.20	3.68		0.87	1.03		22.10	15.62	
Industrial Pharmacy									
No. Participants	1,195	911	-23.76	708	730	3.10	487	181	-62.83
No. Promoted	27,044	12,069	-55.37	10,294	9,519	- 7.52	16,750	2,550	-84.77
Participation Index	4.41	7.54		7.67	6.88		2.91	7.10	
Mixed (Pharmacists and other Health Groups)									
No. Participants	9,710	14,052	44.71	5,991	6,403	6.87	3,719	7,649	105.67
No. Promoted	172,275	179,637	4.27	127,240	113,449	- 10.83	45,035	66.188	46.97
Participation Index	5,63	7.82		4.71	5.64		8.26	11.56	
Total									
No. Participants	15,151	19,783	30.57	7,646	8,541	11.70	7,505	11,242	49.79
No. Promoted	268,365	270,485	0.78	181,171	176,418	- 2.62	87,194	94,067	7.88
Participation Index	5.64	7.31		4.84	4.22		8.61	11.95	

SOURCE: Braucher, C., "A Comparative Analysis of Three Years of Continuing Education Activity"; American Journal of Pharmaceutical Education; 34:237 (May, 1970).

population that participated.

When employment is considered, community pharmacists showed an increase in participation of 11.56 percent, hospital pharmacists increased 25.46 percent, and those pharmacists classified as mixed increased participation by 44.71 percent. On the other hand, industrial pharmacists showed a decline of 23.76 percent.

In 1967, the courses sponsored by pharmacy schools alone attracted 1.87 percent more participants than courses co-sponsored with associations but in 1968 the co-sponsored courses exceeded the school courses by 31.6 percent. This suggests that the associations were a force in promoting courses. This is born out by the participation index computed by Braucher which shows 11.95 percent in 1968 compared with the schools index of 4.22 percent in the same year.

The participation index shows a decline in participation by community pharmacists but an increase in all other classes between 1967 and 1968. Industrial pharmacists had a greater increase in the participation index than did any other class.

When Braucher's data for 1967 is compared with that reported by Jobe (22) for 1966, there is a decrease of 7.8 percent but an increase of 20.38 percent in 1968. The concern is expressed by some in the profession that continuing education may be reaching the same group and that those most in need of continuing education may not be participating (8) (32).

REASONS FOR ATTENDING OR NOT

The three major obstacles to participation identified by respondents in the Purdue study (32) were: the difficulty of finding registered personnel to relieve the pharmacist during his absence; loss of income relative to time away from work; and geographical distance from the location of programs, in that order. While distance was cited as an important obstacle by almost one quarter of the respondents, the school of pharmacy at Purdue conducts programs in local communities; furthermore, four of the eight respondents living in the vicinity of the campus admitted to not having attended a program on campus. This study also found that while 80 percent of the owners of pharmacies expressed a willingness to defray expenses for employees, only 5 percent of the employee respondents had had their expenses paid to attend. Deficiencies in the program were also rated as an important deterrent to attendance. The most frequently cited weakness of programs was their similarity.

Subject matter was the most important reason for attending while a well known speaker was rated second, and conference location third. The inclusion of social events in continuing education sessions was not found to be a major factor influencing the decision to attend.

Scheduling of Programs:

Polls indicate that pharmacists prefer one day sessions (19) (32), however, studies disclose that longer courses scheduled intermittently in the evenings are also favoured by a relatively large percentage of respondents (17) (19). In an earlier survey in the state of Mississippi, two to three day courses were rated highly, despite the obstacles to attendance (17).

Fees:

According to the respondents in the Purdue survey, a reasonable fee for a single session was considered to be between $5.00 and $14.00, but fees were not seen as a major deterrent to attendance.

Felt Learning Needs:

A number of surveys and reports suggest that despite a wide variety of topics requested, pharmacists tend to rate business management subjects relatively high (13) (32) (19) (17). At least two surveys reveal that in the science area the greatest learning needs relate to pharmaceutical advances and pharmacology (19) (32). Bernardi (5) reports that in Connecticut pharmacists are increasingly requesting courses on physiology. Other topics which have been asked for frequently are interprofessional relationships and the effect of legislation on pharmacists (8) (19). When respondents were asked to offer further suggestions in the Purdue study, professional topics were requested far more often than business matters but with scientific subjects almost completely ignored.

Instructional Processes:

The Mississippi survey (17) found that 64 percent preferred the lecture technique. Less than 10 percent wanted participative laboratory courses, but 43.7 percent of the respondents did express an interest in demonstrations,which may indicate that pharmacists desire to learn and observe new techniques. In this study, 18.4 percent selected correspondence as the preferred means of keeping up to date. Other studies provide evidence that pharmacists would like opportunities to engage in independent study (13) (4). Tape recordings on pertinent topics have been cited as a method which would obviate the need to leave work in order to keep up to date. A recent evaluation of a correspondence course reported by Barnes (3) revealed that pharmacists rated correspondence study highly, with older pharmacists most responsive.

CHAPTER XVII

PROGRAM ORGANIZATION AND ADMINISTRATION

A number of institutions and organizations are presently involved in the continuing education of pharmacists. These include: The American Society of Hospital Pharmacists, the Canadian and American Hospital Associations, university schools or colleges of pharmacy and medicine, and pharmaceutical associations at all levels--national, state or provincial, and local. However, the primary sponsors of formal programs are the university schools of pharmacy.

CURRENT COURSE OFFERINGS

There is very little descriptive data available about the extent of continuing education in pharmacy so that it is not possible to show changes over time with any validity. Braucher (9) has supplied virtually the only substantive data available and this covers the period of 1966 to 1968 so it is not sufficient to show positive trends. Courses conducted by Schools of Pharmacy during this three year period show a slight increase from 109 in 1966 to 145 in 1968. While most of these courses were offered on campus, the trend to more off campus courses is evident. In 1966, 68.80 percent of the courses offered were on campus but this declined to 46.89 percent in 1968. In 1967, the use of television was introduced with 13.04 percent of the courses in 1967 and 17.93 percent in 1968 offered through that media. As the number of courses increase the average length of the course declined from 9.51 contact hours in 1966 to 8.92 contact hours in 1968. (Table III)

TABLE X

COURSES SPONSORED BY SCHOOLS OF PHARMACY 1966-1968

CLASSIFIED BY LOCATION AND CONTACT HOURS

Course	Year					
	1966		1967		1968	
	Number	Percent	Number	Percent	Number	Percent
LOCATION						
On Campus	75	68.80	59	51.30	68	46.89
Off Campus	34	31.19	41	35.60	51	35.17
Other*			15	13.04	26	17.93
Total Courses:	109	100.00	115	100.00	145	100.00
CONTACT HOURS						
On Campus	-	-	619	58.45	822	63.52
Off Campus	-	-	404	38.14	389 1/2	30.06
Other*	-	-	36	3.39	83	6.41
Total Hours:	1,037		1,059	100.00	1,294 1/2	100.00
Average hours per course:	9.51		9.20		8.92	

* This includes television, telelecture, etc.

SOURCE: Braucher, C., "Three Year Analysis of Continuing Education." American Journal of Pharmaceutical Education 34:235 (May, 1970).

Braucher also reports the number of courses offered jointly by Schools of Pharmacy and Professional Associations for the same three year period. Joint sponsorship of this sort shows no consistency and no identifiable trends. In 1966 there were 145 jointly sponsored courses with 117 in 1967 and 138 in 1968. These data suggest a decline in joint sponsorship. The location of courses jointly sponsored is equally variable with 85.51 percent off campus in 1966 but 69.56 percent in 1968. The average number of hours per course tended to show an increase from 5.40 in 1966 to 6.90 in 1968 (Table IV).

In comparing jointly sponsored courses with those conducted solely by schools of pharmacy, several differences are noted. Courses conducted by schools are held on campus more frequently and tend to be longer than are those jointly sponsored. School courses on campus have increased in length between 1967 and 1968, while jointly sponsored courses on campus have declined in length over the same period. On the other hand, school sponsored off-campus courses were shorter in 1968 than in 1967, while jointly sponsored off-campus courses did not change in length. In both instances, off campus courses are shorter than those on campus. Although the schools of pharmacy have experimented more with television, jointly sponsored television courses have been longer.

The subject most often presented is pharmacology, with an increase of approximately 50 percent in the number of courses offered on this subject between 1967 and 1968. Subject matter dealing with community pharmacy showed a slight increase of some 16 percent. Although the number of courses on public health increased between 1967 and 1968, clearly course offerings on this very important subject are still small. It is also worth noting that no course was offered on dental health in 1968 and only one course offered in 1967 (Table V).

TABLE XI

COURSES SPONSORED JOINTLY BY SCHOOLS OF PHARMACY AND PROFESSIONAL ASSOCIATIONS 1966-1968 BY LOCATION AND CONTACT HOURS

Course	Year					
	1966		1967		1968	
	Number	Percent	Number	Percent	Number	Percent
LOCATION						
On Campus	22	15.17	42	35.89	40	28.98
Off Campus	124	85.51	73	62.39	96	69.56
Other	-	-	2	1.70	2	1.44
Total Courses:	145	100.00	117	100.00	138	100.00
CONTACT HOURS						
On Campus	-	-	455 1/2	51.76	351 1/2	36.86
Off Campus	-	-	393 1/2	44.70	542	56.93
Other	-	-	30 1/2	3.41	59	6.19
Total Hours:	784	-	879 1/2	100.00	952 1/2	100.00
Average hours per course:	5.40		7.51		6.90	

SOURCE: Braucher, C. "Three Year Analysis of Continuing Education." American Journal of Pharmaceutical Education, 34:235 (May, 1970).

TABLE XII

NUMBER OF COURSES OFFERED BY SUBJECTS IN 1967 AND 1968

	1967	Percent	1968	Percent
Pharmacology	32	14.09	48	18.32
Community Pharmacy	31	13.65	36	13.74
Institutional Pharmacy	31	13.65	31	11.83
Management	34	14.97	34	12.97
Medicare	5	2.20	4	1.52
Pharmaceutics	26	11.45	26	9.92
Law and Ethics	13	5.72	14	5.34
Industrial Technology	14	6.16	15	5.72
Pharmaceutical Chemistry	3	1.32	16	6.10
Disaster Preparedness	-	-	-	-
Pharmacognosy	-	-	-	-
Medical Detailing	1	0.44	1	0.38
Communications and New Drugs	8	3.52	6	2.29
Radioisotopes	-	-	-	-
History	-	-	3	1.14
Career Orientation	-	-	4	1.52
Teaching	3	1.32	4	1.52
Science Librarianship	-	-	-	-
Cancer Control and Detection	1	0.44	3	1.14
Toxicology	3	1.32	3	1.14
Public Health	1	0.44	6	2.29
Dental Health	1	0.44	-	-
Miscellaneous	20	8.81	8	3.05
TOTAL:	227	100.00	262	100.00

SOURCE: Braucher, C., "Three Year Analysis of Continuing Education"; American Journal of Pharmaceutical Education; 34:236 (May, 1970).

ADMINISTRATION

The 1962-63 Report of the American College of Pharmaceutical Education disclosed that in 1962, thirteen colleges of pharmacy had Extension departments. Of this number, three reported a full time person in charge, while nine had a part time director, with two colleges reporting an additional part time person, and three reporting full time clerical staff (27).

A more recent report covering the academic year 1967-68 revealed little change, with only eight of the 74 colleges reporting a full time director in continuing education or extension and only nineteen a part time person. The majority of continuing education programs sponsored by the colleges are managed by faculty who have responsibilities elsewhere (1) which may account for the relatively few courses available.

Finances and Faculty:

As in the other health professions, funds are of prime concern in continuing pharmaceutical education. In 1966, registration fees made up about 45 percent of the total revenue, and in 1968, some 50 percent. The second major source of funds in 1968 was grant money used to subsidize courses (9). Although departments of continuing pharmaceutical education which are part of state universities are in a more stable position financially, generally speaking universities have not allocated much money to continuing education. Since regular faculty members who participate in continuing education programs are usually not paid, this limits the choice of instructors (34).

Although pharmaceutical firms have provided large sums for the development of experimental projects in continuing medical education, they have not been a significant source of funds for continuing pharmaceutical education.

Furthermore, government grants to support continuing education have been minimal. A number of writers express the view that pharmacy has lacked an organized approach in its efforts to obtain additional funding, and they recommend 1) establishment of central statewide continuing education offices to co-ordinate programs, pool resources, and to seek funds; 2) implementation of programs within the RMPS; and 3) inclusion of a research component in the program proposal, thereby ensuring potential sponsors some tangible results from the funds granted (21) (34).

Promotion and Publicity:

Promotion and publicity for continuing education in pharmacy have utilized the well established methods of direct mailing, professional association bulletins, calendars, newspapers, and professional journals (27). The University of Wisconsin department is one exception as it publishes a special periodical which includes, in addition to current course offerings, papers from university programs as well as articles and reports from journals which are not always available to practitioners (36).

An interesting technique that combines promotion with program planning is reported in use at the University of Colorado. White (38) noted:

> 1. A list of "proposed seminar topics" is sent to the students through their association. The participants indicate in which topics they are interested. They also indicate which night and what time schedule they prefer.
> 2. These are returned to the school of pharmacy, and a seminar schedule is made up.
> 3. Students are registered for the seminar by the Bureau, and fees are collected...The Bureau also makes expense payments to the school and to individuals.
> 4. Outlines for each session are prepared by the faculty member in charge of the evening class and these are made available to the students.
> 5. At the last session the students make an evaluation of the seminar, and attendance certificates are presented to the students (38).

SOME SAMPLE PROGRAMS

While continuing education in pharmacy is reported using a wide variety of methods and techniques, the typical program is said to be a conference, institute, or short course, all three of which consist of a series of lectures either on a wide variety of subjects or focussing on several aspects of a single theme (32) (14) (6). Of the few programs mentioned in the literature, the following examples illustrate the more innovative approaches currently in use in continuing pharmaceutical education.

Regional Programs:

The Kansas School of Pharmacy has been conducting statewide circuit type courses for many years. At present, four such programs are being offered in four places throughout the state, with the specific location varying for each circuit. In this way more rural pharmacists are able to participate in planned programs of continuing education (38).

For the past several years the American Society of Hospital Pharmacists (ASHP) has been sponsoring a centrally planned, regionally implemented eight to ten week preceptorship program,designed to orientate community pharmacists to institutional practice. Organized on an intermittent basis one half to one day weekly, this course combines classroom study with clinical practice. In 1969 McConnell (25) reported that more than 2,000 community pharmacists had participated in the program.

Mass Media:

As part of the university's extension service, the pharmacy program at the University of Wisconsin is using telelectures. The first series of such lectures was offered in March and April 1966, and attracted 180 viewers for each program. An evaluation of this series revealed an overwhelmingly favourable response; consequently, in May 1966 a second series was offered on Institutional Pharmacy,utilizing a wide variety of speakers, including a nurse who discussed the nurse's role in the administration of medications. A questionnaire survey revealed that this program was regarded as excellent by the majority of respondents. Telelectures reach 47 locations throughout the State of Wisconsin and have attracted an enthusiastic response.

The college of pharmacy at the University of Minnesota has been using closed circuit television with direct feedback by telephone since 1967. The initial program, presented to three areas on three successive Monday evenings, attracted an interested audience so the project was extended. Subsequent programs have used pre-taped lectures but with the lecturer present in the studio for the question and answer period. In 1968, Hodapp (20) reported that the audience was made up of physicians, pharmacists, drug company representatives, and nurses. Comments from participants disclosed that the interdisciplinary mix was felt to be a valuable learning experience. One questionnaire evaluation revealed that while 52 percent of the pharmacist respondents thought the subject was covered in proper depth, 75 percent of the nurses felt it was covered in too much depth.

Other states reported using television include New York, North and South Dakota, Indiana, and Oklahoma (7).

Home Study:

The highly successful correspondence courses designed by Barnes at the St. Louis College of Pharmacy are said to have pioneered the use of correspondence as an instructional method in continuing pharmaceutical education (27). A number of colleges are reported offering correspondence courses (9), and these appear to be widely used both by course sponsors as adjuncts to short courses and by practitioners as a method of independent study (4).

More recently, programmed instruction is making its way into pharmaceutical continuing education. North Eastern University in Boston, Massachusetts, is reported developing self-contained units and experimental courses (28).

ISSUES AND TRENDS

A recurring theme in the literature on continuing pharmaceutical education is the reported apathy or lack of motivation of practising pharmacists to continue their professional education. The question of how to reach the great number of practitioners who are presently not being reached has been widely discussed from many points of view.

A national survey conducted in 1965 of State pharmacy boards investigated their authority to make continuing education a condition for practice. Of the responding boards 36 felt that they were not so empowered, 9 felt they were, and 7 were uncertain (11). Since that study, at least two states have made participation in continuing education mandatory (8), and in 1968, the Committee on Continuation Studies recommended that a study be undertaken to determine the feasibility of making continuing education mandatory on a national basis (37). Because there are as many valid arguments for as against such a proposal, pharmacy remains divided on the issue (26). At the same time, paralleling the increased pressure from governments to make periodic re-licensure of health professionals compulsory, most of the pharmacy colleges and professional associations are presently re-assessing their continuing education role and activities in the field.

CHAPTER XVIII

SUMMARY

The most significant development in the pharmacy profession in the past decade has been a change in the role of the pharmacist. With the transfer of drug production from the local pharmacy to an industrial establishment, the traditional role of the pharmacist as a compounder of drugs is rapidly disappearing. In its place is emerging a new role that places the pharmacist as the drug expert on the health care team. This emerging role is not completely recognized or accepted by the profession because it demands knowledge and skills of a different sort than that with which the pharmacist has been equipped in his pre-professional education. To assume a new role, then, pharmacists must acquire new and different knowledge through continuing education.

Neither individual pharmacists nor their institutions or associations have long considered continuing education to be a matter of importance. Consequently, there has been little done to provide programs for the further education of the profession. The lack of interest and concern in continuing education is amply illustrated by the paucity of literature on the subject as well as the almost total absence of any relevant research about continuing education in pharmacy. The scanty literature that has been produced is too nebulous and inconsistent to allow for any very reliable description of programs, administration, or participation in continuing education.

Only a very small percentage of the members of the profession participate regularly in planned programs of continuing education. This results from both individual and professional factors. Individuals are deterred from participation by the loss in salary entailed as a result of being away from work and those who are entrepreneurs face the problem of securing a legally qualified person to substitute for them in their pharmacy.

The profession, through its associations and the schools of pharmacy, has failed to provide adequate opportunities for continuing education. This failure stems largely from a lack of interest in and concern for the continuing education of the profession. Add to these a lack of knowledge about how to provide educational opportunities and a lack of fundamental knowledge derived from research about the profession and its need for or acceptance of continuing education. As this review has shown, when the associations and the schools work together to provide educational opportunities, the response is enhanced so they need to become more deeply committed and involved.

The drug industry has provided support for research and experimentation in continuing education for other of the health professions but there is little evidence that it has done so for its own professional group. This may well be due to their not having been pressed to do so by the pharmacy profession.

University schools of pharmacy have the greatest stake in continuing education for the profession since education in pharmacy is their sole raison d'être. Although they have been involved to some extent in continuing education this appears to have occurred with some reluctance and certainly without creative leadership. The university schools of pharmacy have done virtually no research to provide a basis for programs and such that has been done suggests that continuing education has made but a minimal impact upon the practice of pharmacy because the knowledge essential to functional program planning has not been acquired through research. As the role of the pharmacist changes, so must the form, content, and duration of education in pharmacy. In the literature reviewed there was no evidence to indicate an awareness of this in the schools.

Of the several health professions, pharmacy is the most backward with respect to continuing education. The profession must be aroused to the need for it to ensure the survival of pharmacy as a profession.

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PART SIX

EPILOGUE

CHAPTER XVIII

EPILOGUE

Continuing education in the four major health professions has become a matter of growing concern that somewhat belatedly follows the need to keep abreast of expanding knowledge and the demand for better health care. Among these four professions studied, medicine is far in the lead with respect to the quantity of educational activities available to the members of that profession. It is followed in turn by nursing, dentistry, and pharmacy in that order. Each of these fields has approached continuing education differently with respect to the acceptance of the need for education, the resources committed to it, and the kinds of learning activities provided.

In none of the professions is there evidence of a real commitment to continuous learning by its members nor is there any substantial evidence of a real understanding of the educational process. The activities made available tend to be too few in number to meet the need, too badly distributed to be generally available, and too poorly planned and conducted to insure that learning does in fact occur. Medicine has consistently committed proportionately more resources to continuing education than have the other health professions but nursing appears to be more sensitive to the educational process as it applies to continuing education programs. Furthermore, there has been little research in any health profession to find the extent to which existing programs affect the practice of the members of the profession.

PARTICIPATION

Studies of participation in continuing education activities indicate that the members of the several professions are not deeply committed to learning in order to maintain their professional knowledge and skill. Participation rates vary among the four professions and within each. The variation within a profession appears to be related to the degree of specialization of the members. On the whole, the rate of participation falls short of that considered essential by the leadership of the professions.

Individual participation in continuing education is a matter of the attitude and motivation of the individual as well as the relevancy of the programs available.

Attitudes:

The formal school experience of adults develop attitudes about learning that tended to become a barrier to participation in continuing education. The normal pattern of schooling is designed to *terminate* at various points commensurate with an individual's life goals and vocational expectations. As a result, individuals do not recognize or accept the idea that education must continue throughout life in order to maintain some reasonable adjustment with a rapidly changing world.

The health professions reinforce and in fact, accentuate this terminal concept of education by the ways in which the professions are structured. Admission to the profession is the terminal point in education for many members although those with higher expectations may set new terminal points in certain specializations or for specific positions in the profession. Thus, the attitude that education is terminal is reinforced to the point where it mitigates against participation in education continuously.

The prevelance of this concept of education has plagued adult education as Kidd notes:

> This terminal concept has long stood in opposition to the more creative idea that education is inherently an 'open-ended' process which can never be definitely complete as long as life lasts; and that wherever on the ladder one's schooling may have 'terminated', there still remains an as yet unused capacity for mental and spiritual growth. The need and the capacity for education not only continues throughout life but actually increases as the individual matures, provided that the capacity to learn is persistently exercised.

Prior school experiences have also tended to develop rigid and restrictive attitudes about the nature and form of education and learning. From elementary school through university, education has been structured in set patterns of courses, classes, and subjects in which the learner has been involved only passively with emphasis on the acquisition of information. Consequently, activities are rejected if they fall outside the range of traditional school experiences, because individuals have not learned how to learn. Both those who plan programs for continuing education as well as potential participants are inhibited by these restrictive concepts about education.

Motivation:

The motivation to participate is frequently governed by the achievement goals of an individual. The structure of the professions tends to restrict or reduce the motivation to participate so that only those motivated by personal satisfaction are apt to participate in further education after they have reached their terminal educational objective.

The growing interest in limited licensure in the health professions is thought to be an incentive for increased participation in continuing education. This does little more than set recurrent terminal points that will undoubtedly motivate individuals to participate in programs. Thus, while it may increase attendance, limited licensure cannot automatically produce the learning that will lead to improved practice.

An individual may be motivated to attend a continuing education program because of limited licensure, but the motivation to engage in learning will develop only if the individual feels the need to learn and experiences the satisfaction resulting from successful learning. Thus, the participation in education essential to improved practice will occur only through good learning experiences.

Relevancy:

Participation is influenced by an individual's perception of his need for learning so that he will be more apt to attend those activities that appear to be related to his needs and interests. The achievement of relevancy is, therefore, crucial but it is inhibited by the fact that few individuals are capable of identifying their need for learning accurately in functional terms.

In order to insure relevancy it is necessary to develop procedures for assessing the need for learning. The health professions have not yet discovered satisfactory ways of determining needs. Attempts to do so through self-assessment inventories succeed in helping to identify information deficiencies but these are not necessarily the real learning needs. Such inventories operate on the assumption that knowing leads automatically to doing but this is the most persistent fallacy in education. Thus, the identification of information deficiencies does not necessarily apply to the real learning needs related to practice.

The several health professions have achieved little with respect to understanding and solving the problem of participation. Since the problem of participation in continuing education is so strongly influenced by attitudes toward education, the basic solution to the problem will require a major change in pre-professional education programs and in the structure of the professions to establish the concept of continuity in learning as a substitute for the present notion that education is terminal.

PROGRAMS

The principal objective of continuing education in the health professions is the achievement of the learning needed to improve patient care. The literature reviewed here presents scant evidence that this objective is actually reached. It also suggests that certain misconceptions about education may be at the root of the trouble.

Planning:

The four major health professions discussed here have shown some creativity in developing educational activities suited to their particular populations but these have been more the exception than the norm. Most of the programs reported in the literature have adhered to the traditional patterns characteristic of schooling and the specific objectives are rarely identified. Whether stated specifically or not, the objectives have been almost exclusively related to the acquisition of information. It is apparent that there is little awareness of the importance of identifying objectives as the first step in program planning. Consequently, most of the programs reported attempted to cover too much material in the time available, were not directed toward a clearly identified end, and could not be evaluated meaningfully. Only by establishing precise and uncomplicated objectives is it possible to plan useful programs, select content, choose appropriate instructional techniques, and measure the achievement of learning.

Instruction:

Nearly all of the programs discussed in the literature used instructional processes that are effective primarily for the diffusion of information with the lecture being the most frequently used technique. None of the reports indicated any awareness of the desirability of selecting instructional techniques to fit the program objectives and the material to be learned. Furthermore, there was little indication that program instructors did more than act as instruments for the diffusion of information.

To accomplish learning effectively and efficiently it is necessary to manage learning. This involves the selection and arrangement of a sequence of events which the learner must be guided through and provided knowledge of the results of his efforts. This guidance of learning is the responsibility of the instructor who must have knowledge about the conditions affecting learning and the ability to plan the sequence of events through which learning occurs. This management function appears to be one of the weakest aspects of continuing education in the health professions.

RESEARCH

Most of the published material about continuing education in the health professions is exhortative. None of the professions have produced any substantial body of research useful in developing this aspect of the profession. Medicine has produced the largest volume of literature and pharmacy the least.

Although each profession has certain unique characteristics that make it necessary to conduct specific research, there is much that is common to all of the health professions and to all adult education. Because of this, interprofessional research into continuing education would be more economical as well as beneficial to all of the professions. There is little evidence in the literature to indicate that the professions know or have used relevant research about adult learning and instruction that has been produced outside the profession. Greater use of such existing research would enable each profession to concentrate on its own unique questions.

Most of the research literature is descriptive in that it reports programs and procedures used in providing opportunities for continuing education for a particular population. This is most useful for the general spread of innovative program ideas but it contributes little to the advancement of knowledge. Such reports can be enhanced by more complete information about objectives, instruction, the characteristics of the population, and similar data to permit an analysis of the program and the results achieved.

The survey method has been predominant in the studies reviewed. In most cases, this has suffered from inadequate sampling procedures and controls along with incomplete data processing. As a result, the findings are not necessarily valid or reliable, consequently the basic data needed to plan and conduct continuing education activities for the several professions is not yet available.

Very little analytical research that tests relevant hypotheses or seeks to answer crucial questions has been done. As this kind of research increases it will accelerate the accumulation of substantive knowledge about continuing education in the several health professions.

CODA

Although this review of the literature indicates that there is little room for complacency about continuing education in the several health professions, it does show clearly a rapidly growing interest in and concern for the quality and extent of educational opportunities.

The design and conduct of educational activities for adults is itself a specialized body of knowledge and skill comparable to that required to practice in any of the health professions discussed here. It is unusual indeed to find individuals equally equipped for a health profession and for adult education. That this must eventually come to pass is inevitable. Thus, the initiation of improvements in continuing education for the health professions must begin with the development of personnel within each profession for whom adult education is an area of specialization equal to those now generally recognized and accepted by the professions.

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